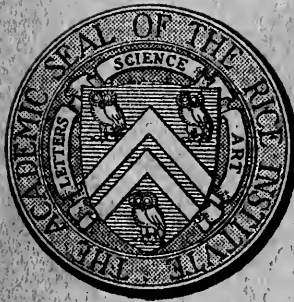
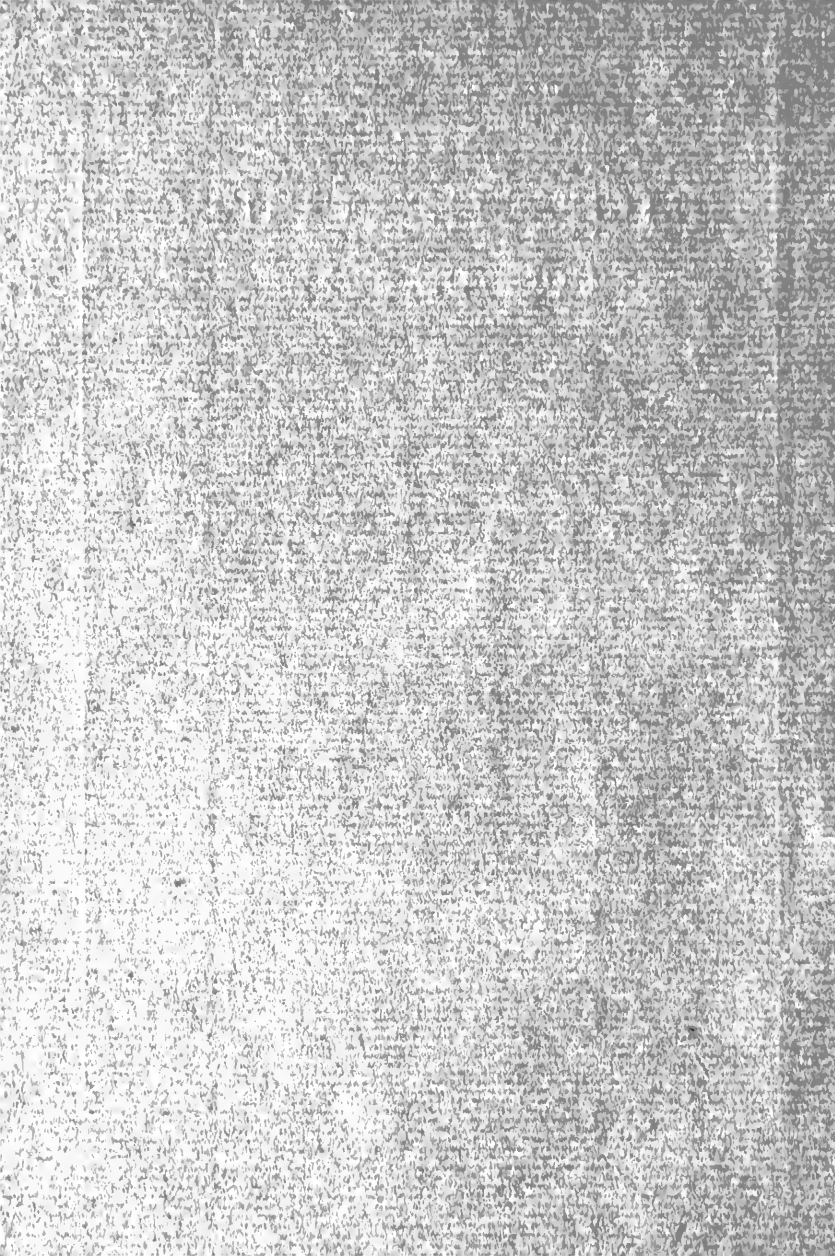


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THE
RICE INSTITUTE
HOUSTON, TEXAS



ANNOUNCEMENTS FOR THE ACADEMIC
YEAR BEGINNING SEPTEMBER SEVENTEENTH
NINETEEN HUNDRED AND
TWENTY-EIGHT

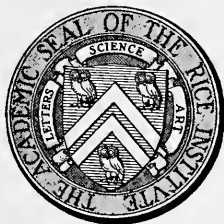


THE RICE INSTITUTE

A UNIVERSITY OF
LIBERAL AND TECHNICAL
LEARNING

FOUNDED IN THE CITY OF HOUSTON, TEXAS
BY WILLIAM MARSH RICE
AND DEDICATED BY HIM TO THE
ADVANCEMENT OF LETTERS
SCIENCE AND ART

OPENED FOR THE RECEPTION OF
STUDENTS IN THE AUTUMN OF
NINETEEN HUNDRED
AND TWELVE



THE BOARD OF TRUSTEES

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EDWARD ANDREW PEDEN



CALENDAR

1928

September 17-20	. .	Entrance Examinations
September 20	. .	Registration of new students
September 21	. .	Registration of old students
September 24	. .	Opening of courses
September 26	. .	Matriculation address
November 29	. .	Thanksgiving Day
December 17-22	. .	Preliminary Examinations for Freshmen and students on probation
December 22	. .	Beginning of Christmas holi- days

1929

January 3	. . .	Resumption of courses
January 30-		
February 7	. .	February Examinations
February 22	. . .	Washington's Birthday
March 2	. . .	Texas Independence Day
May 13-18	. . .	Entrance Examinations
May 27-June 7	. .	Final Examinations
June 8-10.	. . .	Fourteenth Annual Com- mencement

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THE RICE INSTITUTE

OFFICERS OF ADMINISTRATION

EDGAR ODELL LOVETT, PH.D., Sc.D., LL.D.,

President

ROBERT GRANVILLE CALDWELL, PH.D., LITT.D.,

Dean

SAMUEL GLENN McCANN, M.A.,

Registrar

JOHN THOMAS McCANTS, M.A.,

Bursar

THE RICE INSTITUTE

THE NAME

THE new institution bears the name of the founder, the late William Marsh Rice. It aspires to university standing of the highest grade. Dedicated to the advancement of literature, science, and art, the educational programme of liberal and technical learning now being developed may justify the designation "Institute" as representing the functions of a teaching university and, at least in some of its departments, those of the more recent research institutions established in this country and abroad.

BRIEF HISTORICAL SKETCH

It is now rather more than thirty years since several public-spirited citizens of the community asked Mr. Rice to bear the expense of building a new public high school for the city of Houston. This direct gift to the city's welfare Mr. Rice was unwilling to make, but a few months later, taking into his confidence a half-dozen friends, he made known to them his desire to found a much larger educational enterprise for the permanent benefit of the city and state of his adoption. These gentlemen were organized into a Board of Trustees for the new foundation,

THE RICE INSTITUTE

which was incorporated in 1891 under a broad charter granting the trustees large freedom in the future organization of a non-political and non-sectarian institution to be dedicated to the advancement of letters, science, and art. As a nucleus for an endowment fund, Mr. Rice at this time made over an interest-bearing note of two hundred thousand dollars to the original Board of Trustees, consisting of himself, Mr. James A. Baker, and the late Messrs. J. E. McAshan, E. Raphael, F. A. Rice, A. S. Richardson, and C. Lombardi. Under the terms of the charter, the board is a self-perpetuating body of seven members elected for life: vacancies since its organization have been filled by the election of Messrs. William Marsh Rice, Jr., Benjamin Botts Rice, Edgar Odell Lovett, John Thaddeus Scott, Alexander Sessums Cleveland, and Edward Andrew Peden.

It was the unalterable will of the founder that the development of the work which he had conceived should progress no further during his lifetime. However, in the remaining days of his life he increased the endowment fund from time to time by transferring to the trustees the titles to certain of his properties, and in the end made the new foundation his residuary legatee. Upon the termination of the long years of litigation which followed Mr. Rice's death in 1900, the Board of Trustees found the Institute in possession of an estate whose present value is conservatively estimated at approximately ten million dollars, divided by the provisions of the founder's will into almost equal parts available for equipment and endowment respectively. It may be remarked in passing that it is the determined policy of the trustees to build and maintain

ANNOUNCEMENTS

the institution out of the income, thus preserving intact the principal not only of the endowment fund but also that of the equipment fund. While proceeding to convert the non-productive properties of the estate into income-bearing investments, the trustees called Mr. Edgar Odell Lovett, a professor in Princeton University, to assist them in developing the founder's far-reaching plans. Before taking up his residence in Houston, the future president visited the leading educational and scientific establishments of the world, returning in the summer of 1909 from a year's journey of study that extended from England to Japan. About this time negotiations were completed by which the Institute secured a campus of three hundred acres situated on the extension of Houston's main thoroughfare, three miles from the center of the city—a tract of ground universally regarded as the most appropriate within the vicinity of the city.

Another early decision of the trustees of the Institute was the determination that the new university should be housed in noble architecture worthy of the founder's high aims; and upon this idea they entered with no lower ambition than to establish on the campus of the Institute a group of buildings conspicuous alike for their beauty and for their utility, which should stand not only as a worthy monument to the founder's philanthropy, but also as a distinct contribution to the architecture of our country. With this end in view they determined to commit to Messrs. Cram, Goodhue, and Ferguson, of Boston and New York, the task of designing a general architectural plan to embody in the course of future years the realization of the educational programme which had been adopted

THE RICE INSTITUTE

for the Institute. Such a general plan, the work of Mr. Ralph Adams Cram, L.H.D., exhibiting in itself many attractive elements of the architecture of Italy, France, and Spain, was accepted by the board in the spring of 1910. Immediately thereafter plans and specifications for an administration building were prepared, and in the following July the contract for its construction was awarded; three months later the erection of a mechanical laboratory and power-house was begun, and by the next autumn the construction of two wings of the first residential hall for men was well under way. In the preparation of preliminary plans for its initial building operations the Institute enjoyed the coöperation of an advisory committee consisting of Professor Ames, director of the physical laboratory of Johns Hopkins University; Professor Conklin, director of the biological laboratory of Princeton University; Professor Richards, chairman of the department of chemistry, Harvard University; and Professor Stratton, director of the National Bureau of Standards. In 1911, on the seventy-fifth anniversary of Texas Independence, the corner-stone of the administration building was laid by the trustees. This building, the mechanical laboratory of the engineering quadrangle, the power house, and the first two wings of the first residential hall for men were ready for occupancy at the beginning of the first academic year in the fall of 1912. The third wing of this residential hall, begun in 1913, was occupied by the students in the autumn of 1914; while the construction of the physics laboratories and lecture amphitheater, begun also in 1913, was completed in the summer of 1914 from plans prepared by Messrs. Cram and Ferguson under the direction of

ANNOUNCEMENTS

Mr. H. A. Wilson, D.S.C., F.R.S., resident professor of physics in the Institute. In January, 1916, ground was broken for the first wing of the second residential group for men; the construction of this wing was completed by September, 1916. Further building operations were suspended during the war. In the meantime the Athletic Field House and other structures of the exhibition field were completed in 1920. At the commencement exercises of 1923 ground was broken for the new laboratory for chemistry, the plans for which were prepared by Messrs. Cram and Ferguson and Mr. W. W. Watkin, associate architects, under the direction of Mr. H. B. Weiser, Ph.D., resident professor of chemistry in the Institute. The construction of this laboratory was completed during the academic year 1924-25.

The actual work of instruction of the first academic year began on the 23d day of September, 1912, the anniversary of the death of the founder. In the presence of the trustees of the Institute, members of the teaching staff, and representative citizens of the community, the first class of students was received in the faculty chamber of the administration building with appropriate ceremonies on September 26th. The scholastic work of the first academic year was limited to a single class of freshmen of a standard of preparation as high as the best public and private high schools were capable of attaining.

In the early autumn of 1912 an academic festival in observance of the formal opening of the Institute was held under most favorable conditions of weather, most generous coöperation of the community and commonwealth, and the heartening encouragement of several hundred scholars

THE RICE INSTITUTE

and scientists who came to Houston to assist in the launching of the new university. Chief among these distinguished representatives of life and learning were the twelve foreign savants who had consented to participate in the inaugural programme by preparing series of lectures in the liberal humanities of philosophy, history, letters, and arts, and in the fundamental sciences of mathematics, physics, chemistry, and biology. A complete account of the proceedings of the four days devoted to this celebration has been embodied in publications issued in commemoration of that occasion. In the latter appear in full the inaugural lectures of Professor Rafael Altamira y Crevea, of Madrid, Spain; Professor Emile Borel, of Paris, France; Senator Benedetto Croce, of Naples, Italy; Professor Hugo de Vries, of Amsterdam, Holland; the late Professor Sir Henry Jones, of Glasgow, Scotland; the late Privy Councilor Baron Dairoku Kikuchi, of Tokyo, Japan; Professor John William Mackail, of London, England; Privy Councilor Professor Wilhelm Ostwald, of Goss-Bothen, Germany; the late Professor Henri Poincaré, of Paris, France; the late Professor Sir William Ramsay, of London, England; Professor Senator Vito Volterra, of Rome, Italy; Professor Carl Størmer, of Christiania, Norway. In these commemorative volumes there appear also reproductions of responses from American and foreign universities and scientific societies to the invitation of the Institute; the addresses of Governor Colquitt, Chief Justice Brown of Texas, Bishop Gailor of Tennessee, the inaugural poem of Dr. Henry van Dyke of Princeton, and the dedicatory sermon by Dr. Charles F. Aked of San Francisco; together with the addresses delivered by the presidents or other

ANNOUNCEMENTS

official representatives of Amsterdam, Glasgow, London, Oviedo, Paris, Rome, Baylor, Chicago, Columbia, Lehigh, Princeton, Texas, Vanderbilt, and Virginia universities; and a variety of other literary and artistic performances which are not easily classified in a brief résumé. More recently a special volume has appeared embodying the lectures and conferences delivered at the Institute on the occasion of visits to the Rice Institute from the British Educational Mission and the Official Mission of French Scholars to the Universities of the United States. In similar publications have appeared the lectures of the late Professor Sir Henry Jones, inaugurating the public lectureship on the Sharp Foundation, and under the same foundation the lectures of Dr. Terrot Reaveley Glover, Public Orator of Cambridge University; those of the Honorable William Howard Taft, Chief Justice of the United States, the Right Honorable Sir Auckland Geddes, British Ambassador to the United States, and President A. Lawrence Lowell, of Harvard University, on the Godwin Lectureship in Public Affairs; those of Mr. John Powell, the American composer and pianist, inaugurating the recently endowed lectureship on music for which a friend of the Institute has anonymously made provision, and the lectures on the same foundation of Mademoiselle Nadia Boulanger of Paris, Sir Henry Hadow, Vice-Chancellor of the University of Sheffield, and M. Maurice Ravel of Paris; the Plymouth Tercentenary Lecture by Sir Arthur Shipley, of the University of Cambridge; a course of lectures by resident members of the Institute in observance of the six hundredth anniversary of the death of Dante; lectures on mathematics by Senator Vito Volterra, of the University of Rome, by Professor

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Jacques Hadamard, of the Collège de France, and by Professor Ch. J. de la Vallée Poussin, of the University of Louvain; on biology by Professor Edwin Grant Conklin, of Princeton University, and by Professor Julian Huxley, of King's College, London; on astronomy by Professor Henry Norris Russell, of Princeton University; on chemistry by Professor Edward C. C. Baly, of the University of Liverpool; and addresses by the late Charles William Eliot, of Harvard University; Dean Frank Thilly, of Cornell University; President John Grier Hibben, of Princeton University; Provost Joseph Sweetman Ames of Johns Hopkins University; and Baron E. de Cartier de Marichienne, lately Belgian Ambassador to the United States.

THE FACULTY¹

Edgar Altenburg, Ph.D. (Columbia), formerly Assistant in Biology at Columbia University; later Instructor in Biology at the Rice Institute; Assistant Professor of Biology.

Alejandro Arratia, B.A. (Chile), formerly Instructor at the Linceo Pedagógico, Santiago, Chile; later Assistant in Spanish at the Rice Institute; Instructor in Spanish.

Franklin Durham Ashcraft, B.A. (Greenville), formerly Director of Physical Education at Sam Houston State Teacher's College; Instructor in Physical Education.

Stockton Axson, M.A. (Wesleyan), Litt.D. (Pittsburgh), L.H.D. (Wesleyan), LL.D. (Knox), formerly of the University of Vermont and of Adelphi College; later Professor of English Literature in Princeton University; Professor of English Literature.

¹ Arranged in alphabetical order, with last appointment before receiving academic appointment at this institution.

ANNOUNCEMENTS

Frederick Lovell Bixby, B.A. (Clark), Ph.D. (Cornell), formerly Instructor in Psychology at Cornell University; Assistant Professor of Psychology.

Harry Lee Bowen, B.A. (Virginia), M.A. and Ph.D. (Johns Hopkins), formerly Assistant in History at Johns Hopkins University; Instructor in European History.

Hubert Evelyn Bray, B.A. (Tufts), M.A. (Harvard), Ph.D. (Rice), formerly Instructor in Mathematics at Tufts College and at Lafayette College; Fellow in Mathematics and later Instructor in Mathematics at the Rice Institute; Assistant Professor of Mathematics.

Charles Lowman Browne, B.S. (Kenyon), B. Arch. (Cornell), Instructor in Architectural Construction.

Frederic William Browne, Graduate of the School of Industrial Art of the Pennsylvania Museum, Philadelphia; Instructor in Architectural Drawing and Painting.

Andrew Bonnell Bryan, Ph.D. (Rice), formerly Fellow in Physics at the Rice Institute; Instructor in Physics.

Robert Granville Caldwell, B.A. (Wooster), Ph.D. (Princeton), Litt.D. (Wooster), formerly Fellow of Princeton University; Professor of Economics in the College of Wooster; later Assistant Professor of History at the Rice Institute; Professor of American History and Dean of the Institute.

Asa Crawford Chandler, B.A. (Cornell), Ph.D. (California), formerly Assistant Professor of Zoölogy and Physiology at Oregon Agricultural College; Instructor in Biology at the Rice Institute; Research Associate of the School of Tropical Medicine, Calcutta, India; Professor of Biology.

James Chillman, Jr., M.S. in Arch. (Pennsylvania),

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F.A.A.R., M.A.I.A., formerly Alumni Fellow in Architecture at the University of Pennsylvania; Instructor in Freehand Drawing at the University of Pennsylvania; Instructor in Architecture at the Rice Institute; later Burnham Fellow in Architecture at the American Academy in Rome; Assistant Professor of Architecture.

Robert R. Crookston, B.S. in M.E. (Carnegie Inst. Tech.), formerly with the Westinghouse Airbrake Company of Pittsburgh; Instructor in Mechanical Engineering.

Kenneth Dameron, B.A. (Beloit), M.A. (California), formerly Instructor in Economics at Princeton University and at New York University; Instructor in Economics.

Griffith Conrad Evans, Ph.D. (Harvard), formerly Instructor in Mathematics at Harvard University; Sheldon Fellow of Harvard University at the University of Rome; later Assistant Professor of Pure Mathematics at the Rice Institute; Professor of Pure Mathematics.

Augusto Eyquem, Bachelor of Humanities (Chile), formerly Instructor in Spanish at Princeton University, later Assistant in Spanish at the Rice Institute; Instructor in Spanish.

Lester R. Ford, B.A. (Missouri), Ph.D. (Harvard), formerly Lecturer in Mathematics at the University of Edinburgh; Sheldon Fellow of Harvard University at the University of Paris; later Instructor in Mathematics at Harvard University and Instructor in Life Insurance in the Graduate School of Business Administration of Harvard University; Assistant Professor of Mathematics.

Max Freund, Ph.D. (Leipsic), formerly Assistant Lecturer in the German Language and Literature at Liverpool University College; Royal Professor of German and

ANNOUNCEMENTS

Teutonic Philology in Queen's University of Belfast, Ireland, and Examiner in the Royal University of Ireland; later Professorial Lecturer in Modern English at the Universities of Giessen and Marburg, Germany; Professor of German.

Allen Darnaby Garrison, Ph.D. (Rice), formerly Fellow in Chemistry at the Rice Institute under appointment of the National Research Council, later Instructor in Physical Chemistry at the Rice Institute; Assistant Professor of Physical Chemistry.

William Hartman, B.A. (Dartmouth), M.A. (Harvard); Instructor in English.

Arthur J. Hartsook, M.S. (Mass. Inst. Tech.), formerly Instructor in Chemistry at the University of Nebraska; later Instructor in Industrial Chemistry at the Rice Institute; Assistant Professor of Chemical Engineering.

Ray Nelson Haskell, B.S. (Chicago), formerly Instructor in Mathematics at the University of Tennessee and later at Michigan Agricultural College; Instructor in Mathematics.

Claude William Heaps, B.S. (Northwestern), Ph.D. (Princeton), formerly Class of 1860 Experimental Science Fellow of Princeton University; Instructor in Physics at the University of Missouri; Instructor in Physics and later Assistant Professor of Physics at the Rice Institute; Professor of Physics.

Alden Richardson Hefler, B.A. (Dartmouth), M.A. (Harvard); Instructor in French.

George Darby Helm, B.S. (Oregon Agricultural College), M.A. (Univ. of Oregon), formerly Instructor in English

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at the Northern Arizona State Normal School; later Teaching Assistant in English at the University of Oregon; Instructor in English.

Gordon Green Hill, B.A. (Wesleyan); Instructor in English.

Herbert Kay Humphrey, B.S. in E.E. (Illinois), M.S. in E.E. (Union), E.E. (Illinois), formerly Assistant Consulting Engineer of the General Electric Company; later Instructor in Electrical Engineering at the Rice Institute; Assistant Professor of Electrical Engineering.

John Fred Jost, B.A. (Eden College), M.A. (Harvard) formerly Instructor in German at the University of North Carolina and at Trinity College, Hartford, Connecticut; Instructor in German.

Walter Raymond Kirner, B.S. and M.S. (Illinois), Ph.D. (Harvard), formerly Assistant in Organic Chemistry at Harvard University; Associate Professor of Organic Chemistry at Middlebury College; later Instructor in Organic Chemistry at the Rice Institute; Assistant Professor of Organic Chemistry.

Floyd Seyward Lear, B.A. (Rochester), M.A. and Ph.D. (Harvard), formerly Instructor in History at Harvard University; later Instructor in History at the Rice Institute; Assistant Professor of History.

Edgar Odell Lovett, Ph.D. (Virginia and Leipsic), LL.D. (Drake, Tulane, and Baylor), Sc.D. (Colorado College), formerly Professor of Mathematics in Princeton University, and later Head of the Department of Astronomy in the same institution; Professor of Mathematics and President of the Institute.

Jarmon Alvis Lynch, B.A. (West Texas State Teachers),

ANNOUNCEMENTS

Ph.D. (Chicago), formerly Scholar at the University of Chicago; Instructor in Education.

Samuel Glenn McCann, Ph.D. (Wooster), M.A. (Rice), formerly Fellow in History at the Rice Institute; Instructor in Jurisprudence and Registrar of the Institute.

John Thomas McCants, M.A. (Virginia and Yale), formerly Scholar at the University of Virginia and University Fellow at Yale University; later Instructor in English at the Rice Institute; Instructor in Business Administration and Bursar of the Institute.

Alan Dugald McKillop, Ph.D. (Harvard), formerly Instructor in English at the University of Illinois; later Instructor in English at the Rice Institute; Assistant Professor of English.

Austin Mardon, M.A. (Trinity College, Cambridge), formerly Instructor in English History at Cornell University; Lecturer in English History.

Edward Roy Cecil Miles, B.S. (Georgia Inst. Tech.), M.A. (Harvard), formerly Instructor in Mathematics at Georgia Institute of Technology, at the University of Georgia, at the United States Naval Academy, and at Harvard University; Instructor in Mathematics.

John Marshall Miller, B.S. in E.E. (Kansas State Agricultural College), formerly with the Western Electric Company, Chicago, and later with the Southern California Edison Electric Company, Los Angeles; Instructor in Engineering Drawing.

Marcel Moraud, Agrégé de l'Université de France, formerly Instructor in French at the University of Minnesota and at Princeton University; later Associate Professor of French at the University of Toronto; Professor of French.

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Charles William Morris, Jr., B.S. (Northwestern), Ph.D. (Chicago), formerly Assistant in Philosophy at the University of Chicago; Instructor in Philosophy.

Lewis Morton Mott-Smith, Ph.D. (California Inst. Tech.), formerly Teaching Fellow at the California Institute of Technology; Instructor in Physics.

Henry Oscar Nicholas, B.A. (Oberlin), Ph.D. (Yale), formerly Fellow and Assistant in Chemistry at Yale University; Instructor in Analytical Chemistry at Yale University; later Instructor in Analytical Chemistry at the Rice Institute; Instructor in Chemistry.

Eugene Jean Oberlé, M.A. (Stanford), formerly Instructor in Romanic Languages at the Leland Stanford Junior University; Instructor in French.

John Virgil Pennington, M.E. (Stevens), formerly Assistant Engineer, Public Service Corporation of New Jersey; Instructor in Mechanical Engineering.

Joseph Horace Pound, B.S. in M.E., and M.E. (Missouri), formerly Instructor in the School of the Westinghouse Machine Company; later Instructor in Mechanical Engineering at the Rice Institute; Assistant Professor of Mechanical Engineering.

Claude James Rothgeb, formerly Athletic Director and coach at Colorado Agricultural College and at Colorado College; later Line Coach at the Agricultural and Mechanical College of Texas; Assistant Director of Athletics at the Rice Institute; Acting Director of Athletics.

Lewis Babcock Ryon, Jr., C.E. (Lehigh), formerly Instructor in Civil Engineering at the Rice Institute; Assistant Professor of Civil Engineering.

Arthur Ferdinand Scott, B.S. (Colby), M.A. and Ph.D.

ANNOUNCEMENTS

(Harvard), formerly Assistant in Chemistry at Harvard University and later Sheldon Fellow of Harvard University; Assistant Professor of Chemistry at Reed College; Instructor in Analytical Chemistry.

Lee M. Sharrar, B.A. (Alma College), M.A. (Columbia), formerly Assistant Professor of Economics at Alma College; Instructor in Economics.

John Willis Slaughter, B.A. (Lombard), Ph.D. (Michigan), formerly Lecturer on Sociology in the School of Economics at the University of London; Lecturer in Civics and Philanthropy.

James Harry Smith, M.A. (Harvard), formerly Associate Instructor in Latin at Culver Military Academy; Instructor in English.

Morris Albion Stewart, B.S. (New Hampshire), M.S. (Cornell), formerly Instructor in Biology at the University of Rochester; Instructor in Biology.

Radoslav Andrea Tsanoff, B.A. (Oberlin), Ph.D. (Cornell), formerly Sage Fellow of Cornell University; Instructor in Philosophy at Clark University; later Assistant Professor of Philosophy at the Rice Institute; Professor of Philosophy.

Leo Vernon Uhrig, B.S. in C.E. (Missouri), formerly of the Engineering Department of the City of Detroit; Instructor in Civil Engineering.

James Stephen Waters, B.S. (Rice); Instructor in Engineering.

William Ward Watkin, B.S. in Arch. (Pennsylvania), M.A.I.A., formerly Scholar in Architecture in the University of Pennsylvania; Associate Architect with Messrs. Cram and Ferguson, the supervising architects of the Institute; Instructor in Architecture, and later Assistant

THE RICE INSTITUTE

Professor of Architecture, at the Rice Institute; Professor of Architecture.

Harry Boyer Weiser, M.A. (Ohio State), Ph.D. (Cornell), formerly Assistant Instructor in Chemistry at Cornell University; Assistant Professor of Chemistry in the University of Tennessee; Instructor in Chemistry, and later Assistant Professor of Chemistry, at the Rice Institute; Professor of Chemistry.

William Erickson White, B.S. in C.E. (Iowa State), formerly Research Assistant in Highway Engineering at Iowa State College; Instructor in Civil Engineering and later Assistant Professor of Civil Engineering at South Dakota State College; Instructor in Civil Engineering.

George Wesley Whiting, B.A. (West Virginia), M.A. (Harvard), Ph.D. (Chicago), formerly Assistant Professor of English at the Michigan State College, and Assistant in English at the University of Chicago; Instructor in English.

George Guion Williams, M.A. (Rice), formerly Assistant and later Instructor in English at the Rice Institute; Teaching Fellow in English in New York University; Instructor in English.

Harold Albert Wilson, F.R.S., M.A. (Cambridge), M.Sc. (Victoria), D.Sc. (London), formerly 1851 Exhibition Scholar of Leeds University; Allen Scholar and Clerk Maxwell Student of Cambridge University; Scholar in Physics of London University; Fellow of Trinity College, Cambridge University; Professor of Physics in King's College, London; Professor of Physics in McGill University; Professor of Physics at the Rice Institute; later Professor of Natural Philosophy in the University of Glasgow; Professor of Physics.

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Canio Zarrilli, B.A. (Lafayette), M.A. (Columbia), formerly Instructor in French and Spanish at Waynesburg College; Instructor in Spanish.

William Gordon Zeeveld, B.A. (Rochester), M.A. (Johns Hopkins); Instructor in English.

ASSISTANTS AND FELLOWS

Francis Marion Adams, M.S. (Southern Methodist), formerly Instructor in Biology at Southern Methodist University; Fellow in Biology.

Vaughn Shaffer Albertson, B.A. (Rice); Assistant in English.

Edward Bowers Arrants, B.S. in Arch. (Rice); Fellow in Architecture.

Henry Eugene Banta, B.A. (Rice); Fellow in Physics.

Edwin Ford Beckenbach, B.A. (Rice); Fellow in Mathematics.

Ernest Eugene Blondeau, M.A. (Rice); Fellow in Physics.

Alice Crowell Dean, M.A. (Rice); Fellow in Mathematics.

Charles Hewitt Dix, B.S. (California Inst. Tech.), M.A. (Rice); Fellow in Mathematics.

Edward Josephi Durham, B.A. (Reed), M.A. (Rice), formerly Assistant Chemist with the Crown-Willamette Paper Company, Portland, Oregon; Fellow in Chemistry.

Nat Edmonson, M.A. (Austin College), formerly Assistant in Mathematics at Austin College; Fellow in Mathematics.

Lacoste George Ellis, B.A. (Rice); Fellow in Physics.

Jacques Jean Engerrand, B.A. (Texas); Assistant in French.

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William Maurice Ewing, M.A. (Rice); Fellow in Physics.

Paul Duane Harwood, B.S. (Cornell); Fellow in Biology.

Deborah May Hickey, M.A. (Rice); Fellow in Mathematics.

Clyde Roland Johnson, B.A. (Reed), M.A. (Rice); Fellow in Chemistry.

Gordon Lee Locher, B.A. (Park College), M.A. (Rice), formerly Assistant in Physics at Park College; Fellow in Physics.

Guilford Leroy Mack, B.S. (Oregon State Agricultural); Fellow in Chemistry.

Addison Stayton Nunn, B.S. in Arch. (Rice); Assistant in Architecture.

George Holmes Richter, M.A. (Rice), formerly Assistant in Chemistry at the Rice Institute; Fellow in Chemistry.

William Monroe Rust, Jr., B.A. (Rice); Fellow in Mathematics.

William Gilmore Smiley, Jr., B.A. (Rice); Fellow in Mathematics.

SCHOLARSHIPS

WHILE seeking to develop its students in character, in culture, and in citizenship, the Rice Institute will reserve for scholarship its highest rewards and in particular for evidences of creative capacity in productive scholarship. To encourage this devotion to learning there have been devised through the donations of friends of the Institute a number of undergraduate scholarships to be awarded preferably to those students who have been in residence at the Institute for at least one year. Moreover, honorary

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scholarships without stipend may be granted to students whose scholastic standing shows marked ability.

THE GRAHAM BAKER STUDENTSHIP

The first of these undergraduate scholarships to be established at the Institute is the Graham Baker Studentship, founded by Captain and Mrs. James A. Baker, of Houston, in memory of their eldest son, the late Frank Graham Baker. This studentship is awarded annually to students of the Rice Institute upon the basis of highest standing in scholarship, and the holder is known as the Graham Baker Student for the year. The award is announced at the commencement convocation in June, and the annual stipend is \$300.

THE HOHENTHAL SCHOLARSHIPS

The Hohenthal Scholarship Fund is a gift to the Rice Institute made through the good offices of Mr. William M. Rice, Jr., from the estate of the late Lionel Hohenthal, of Houston, who in his last will and testament instructed his executor, Mr. Rice, to devote the residue of his estate to the founding of a permanent memorial to Mr. Hohenthal's mother, father, and brother. The scholarships provided by this fund are known as the Hohenthal Scholarships, and the holders as the Hohenthal Scholars of the Institute. These scholarships are awarded annually to students who are earning a substantial part of their college expenses on a basis of high standing in scholarship. Each of the six now available carries with it an annual stipend of \$200.

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SCHOLARSHIPS IN CIVICS AND PHILANTHROPY

With the Sharp Lectureship in Civics and Philanthropy founded by Mrs. Estelle B. Sharp, of Houston, there are associated four scholarships in civics and philanthropy. For the last academic year the scholarships were provided by Messrs. William L. Clayton, Will C. Hogg, and Harry C. Wiess, of Houston. These scholarships bear an annual stipend of \$250 and are awarded preferably to graduates of high standing intending to prepare for work in social service.

THE D.A.R. SCHOLARSHIP

The John McKnitt Alexander Chapter of the Daughters of the American Revolution has provided an endowed undergraduate scholarship at the Rice Institute. Under the present conditions of this scholarship it is awarded to a young woman student on admission to the Institute and carries with it an annual stipend of \$300. The first award was made for the academic year 1919-20.

THE ELLEN AXSON WILSON SCHOLARSHIP

The Axson Club, an organization of Houston Women in the interests of literary pursuits, recently concluded a successful campaign for the endowment of a permanent scholarship at the Rice Institute in memory of Ellen Axson Wilson (the late Mrs. Woodrow Wilson), the scholarship to be awarded from year to year to a young woman student of the Institute. The annual stipend of the Ellen Axson Wilson Scholarship is \$600, and the first award of the scholarship was made for the academic year 1922-23.

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THE ELIZABETH BALDWIN LITERARY SOCIETY SCHOLARSHIP

The Elizabeth Baldwin Literary Society of the Rice Institute is maintaining annually a scholarship with a view to providing permanent endowment therefor. This Scholarship is available to a student of the Rice Institute, either a young man or a young woman, the candidate to be chosen by the faculty on grounds of scholarship, personality, and physical vigor. The present annual stipend of the Elizabeth Baldwin Literary Society Scholarship is \$300, and the first award of the scholarship was made for the academic year 1926-27.

THE PALLAS ATHENE LITERARY SOCIETY SCHOLARSHIP

The Pallas Athene Literary Society of the Rice Institute is providing an annual scholarship at the Rice Institute, with the intention of raising a permanent endowment for the scholarship. This scholarship is open to a young woman student of the Rice Institute, to be selected by the faculty on grounds of scholarship, personality, and physical vigor. The present annual stipend of the Pallas Athene Literary Society Scholarship is \$300, and the first award of the scholarship was made for the academic year 1926-27.

THE ASSOCIATION OF RICE ALUMNI SCHOLARSHIP

The Association of Rice Alumni is maintaining an annual scholarship at the Rice Institute with the expectation of providing permanent endowment therefor. This scholarship is open to a self-supporting young man student of the Rice Institute, the candidate to be selected by the faculty on grounds of scholarship, personality, and physical vigor.

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The present annual stipend of the Association of Rice Alumni Scholarship is \$300, and the first award of the scholarship was made for the academic year 1926-27.

THE DANIEL RIPLEY SCHOLARSHIP

In memory of her husband, the late Daniel Ripley, for many years a prominent citizen of Houston, Mrs. Edith Ripley has established by the donation to the Institute of \$10,000, the Daniel Ripley Scholarship. The annual income of this trust fund is to be awarded to that self-supporting young man or woman student completing the freshman year at the Rice Institute who receives the highest grades, and the candidate is to be selected by the faculty. The first award of the Daniel Ripley Scholarship was made in the academic year 1927-28.

THE JUNIOR ENGINEERING SCHOLARSHIP

To foster interest in engineering education at the Rice Institute and to provide for recognition for work well done, an anonymous donor is contributing to the Rice Institute the sum of \$300 annually as a stipend for the junior Engineering Scholarship, to be awarded to that male student in a regular junior engineering course who has the highest scholastic standing in his courses taken that year. This scholarship is restricted to no particular field of engineering, the selection of the scholar is made by the faculty, and in making the selection account is taken of individual qualifications of character and personality, but no consideration is to be given to the financial circumstances of the student. The first award of the Junior

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Engineering Scholarship has been made for the academic year 1928-29.

THE EDITH RIPLEY SCHOLARSHIPS

Mrs. Edith Ripley of Houston has established three Edith Ripley Scholarships by the donation of \$10,000 to the Rice Institute, the income of which is to be distributed equally and annually to three young women students of the Institute to be selected by the faculty. In selecting the beneficiaries of this donation, consideration is to be given to the mental, moral, and womanly qualities of the candidates, as well as to their financial necessities. The first awards of the three Edith Ripley Scholarships have been made for the academic year 1928-29.

THE TRAVELING SCHOLARSHIP IN ARCHITECTURE

Provision for a Rice Institute Traveling Scholarship in Architecture has been made by the following gentlemen: Messrs. W. L. Clayton, George S. Cohen, Alfred C. Finn, Wyatt G. Hedrick, F. A. Heitmann, E. L. Neville, Cleveland Sewall, and William Ward Watkin, who have individually pledged the amount of \$150 each year for five years to a stipend of \$1200 to be given each year to a student in architecture for the purposes of European travel and study. The selection of the holder of the Traveling Scholarship is to be made by the faculty of the Department of Architecture by means of a formal competition arranged each year for such purpose by the faculty and in which students or graduates of the Rice Institute are eligible to participate. The first award of the Traveling

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Scholarship in Architecture has been made for the academic year 1928-29.

THE TRAVELING FELLOWSHIP

Another Houston friend of youth and learning, who desires to remain anonymous, is donating to the Rice Institute the sum of \$1800 annually as a stipend for a traveling fellowship, to be awarded to a graduate of the Rice Institute giving promise of leadership in scholarship and service, selected by the faculty. It is the donor's wish that in the choice of fellows there be no restriction with respect to special field of intellectual endeavor, but that the emphasis be laid on evidence of outstanding ability. The first award of the Traveling Fellowship was made for the academic year 1927-28.

THE LADY GEDDES PRIZE IN WRITING

The Right Honorable Sir Auckland Geddes, British Ambassador to the United States, Godwin Lecturer of the Rice Institute in 1921, has endowed at Rice a prize in writing, which is to bear the name of Lady Geddes. This prize is to be awarded annually from the income of the endowment of one thousand dollars.

The first award of the Lady Geddes Prize in Writing was made at the end of the academic year 1922-23, the competition of this award being open to members of the freshman and sophomore classes of the Rice Institute, and the subjects assigned pertaining to the relations between Great Britain and the United States.

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FELLOWSHIPS

THE Rice Institute seeks to interpret in a large way its dedication to the advancement of letters, science, and art. It not only looks to the employment of these disciplines in the development of the life of the individual and in that of the race, but it would also play its part in the progress and enlargement of human knowledge by contributions of its own resident professors and scholars. Accordingly there have always been associated with the staff of the Institute advanced students in training for careers both as teachers and researchers: with this end in view, graduate fellowships have been awarded from time to time to degree-bearing students of the Institute and other educational foundations.

OPPORTUNITIES FOR SELF-HELP

IN addition to the stipends of fellowships and endowed scholarships, there are, on the campus and in the city, opportunities in considerable variety for worthy and deserving students to earn a part of their living expenses while attending the Institute. Information concerning such openings may be obtained from the Bursar. Thanks also to the generosity of a number of citizens of Houston, there are available several student loan funds. Inquiries concerning the administration of these funds should be addressed to the Bursar.

GENERAL REQUIREMENTS FOR ADMISSION

ALL candidates for admission to the Institute are required to present satisfactory testimonials as to their character,

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and either to pass examinations in the entrance subjects, or, in lieu thereof, to present certificate of graduation from an approved public or private high school. The standard requirements for matriculation are determined by the system of units given below. A unit represents a course of study pursued five hours a week for an academic year. Appropriate application forms may be secured from the Registrar.

Fifteen units are required for entrance in full standing to the freshman class of the Institute. No candidate for admission will be accepted with fewer than fifteen units. And towards this total of fifteen units, every candidate will be required to present, from the lists of subjects printed below, at least three units in English, three units in mathematics,¹ two in algebra and one in plane geometry, two units in history, and three units in one foreign language or two units in each of two foreign languages. Variation in the distribution of units may be considered in individual cases.

METHOD OF PROCEDURE FOR ADMISSION

I. General Policy of Competitive Admission of Students

With the rapid growth in population of Houston and the Southwest, accompanied by an even more rapid increase in the demand for college training, the Rice Institute is brought face to face with the problem of maintaining high standards of instruction without shutting the door of opportunity to properly qualified students. It

¹ Students expecting to enter the Institute are advised to elect mathematics during their fourth year. If possible, this course should include training in algebra and trigonometry.

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is therefor proposed, for the immediate future, to meet this problem by a plan of admission based on the following principles:

1. The maintenance, as in the past, of standards for entrance on a high plane.
2. The adoption in advance for each academic year or group of years of a specific number of new students to be admitted on a competitive basis. This number should be slightly smaller than the demand but not so far below that demand as to cause injustice to well qualified students.
3. The division of students into still smaller groups especially in the classes in elementary subjects. The adoption of this principle makes necessary the acceptance of a smaller total number, but means that a larger number will receive careful and adequate instruction.

II. *Specific Plan for the Admission of Four Hundred New Students in the Autumn of 1928*

The Rice Institute will accept four hundred new students in September, 1928. The total student body will thus consist of about thirteen hundred members, which was approximately the enrollment in September, 1927.

In selecting the members of the Freshman Class the Committee will be guided by such principles as the following:

1. As at present, no candidate to be accepted with fewer than fifteen units.

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2. Preference to be given to candidates who present the maximum number of units in English, Mathematics, Foreign Languages, Science, and History.
3. Preference to be given to candidates who show special promise and capacity for leadership, especially those in the upper half of their high school class.
4. Of candidates not in one of the above preferential groups, special preference to be given to those who prove fitness by taking entrance examinations in one or more subjects.
5. Preference to be given to candidates whose applications are received early.
6. Candidates, once chosen, are received without conditions.

LIST OF SUBJECTS WITH VALUES IN UNITS

BOTANY 1; Chemistry 1; Civics ($\frac{1}{2}$ or 1); English (3 or 4); French (Elementary 2, Intermediate 1, Advanced 1); German (Elementary 2, Intermediate 1); Greek (Grammar and Elementary Prose Composition 1, Xenophon 1, Homer—*Iliad*, Books I–III 1); History (Ancient 1, Medieval and Modern 1, English 1, American 1); Latin (Grammar, Elementary Prose Composition and Cæsar 2, Cicero 1, Virgil 1); Mathematics (Algebra 2, Plane Geometry 1, Solid Geometry $\frac{1}{2}$, Trigonometry $\frac{1}{2}$); Spanish (Elementary 2, Intermediate 1, Advanced 1); Physics 1; Physical Geography $\frac{1}{2}$; Physiology $\frac{1}{2}$; Zoölogy 1. Sub-

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stitutes for certain of these subjects may be considered in individual cases.

Entrance examinations will be held at the Institute beginning September 17, 1928 and again during the week beginning May 13, 1929. Applications for the privilege of taking these examinations must be received at the Registrar's Office three weeks in advance of the beginning of the examinations. Such applications must be accompanied by statements and records from schools attended by candidates. Appropriate forms for such applications and records may be obtained from the Registrar's Office of the Rice Institute on request.

The terms of admission to the Institute are based on the recommendations of the Carnegie Foundation for the Advancement of Teaching as expressed in the Documents of the College Entrance Examination Board. Complete information with respect to further details of these requirements will be forwarded by the Institute to any candidate upon receipt of a request addressed to the Registrar of the Institute.

Advanced credit will be granted to students coming from other recognized colleges and universities only when the work presented is equivalent in content and quality to a full year course at the Institute. Such prospective students should make early application to the Registrar and submit official statements of their preparatory and college work, together with catalogues of the institutions attended.

EXPENSES

THE opportunities for study and research offered by the Rice Institute are open without tuition both to young

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men and to young women. Students, of course, are expected to meet all expenses incurred in the purchase of text books, drafting instruments, note books, examination papers, certificates and diplomas, and the materials actually used up in the experimental courses in pure and applied science. An annual registration fee of ten dollars is required of all students. An annual medical fee of five dollars is required of all students living in the Residential Halls. A contingent deposit of ten dollars, payable at registration, must be maintained by each student. In addition to this general contingent deposit, laboratory deposits also payable at registration must be maintained at the Office of the Bursar as follows: a deposit of twenty-five dollars for each course taken in biology, chemistry, and physics; and a deposit of twenty-five dollars for the junior and senior courses in civil, electrical, and mechanical engineering.

These deposits, contingent and laboratory, will ordinarily cover the charges against the student for materials, et cetera, but in the event these charges against any particular deposit should approach the amount of that deposit, the student will be required to make such additional payment as will bring his deposit to the original amount: this is what is meant by maintaining a deposit. Any balances on these deposits are returned in July following the academic year. For delayed registration a penalty is required. See page 89 for nominal expenses in connection with physical training.

No student in arrears in his bills to the Institute will be admitted to any of the examinations.

At the time of registration a fee of fifteen dollars is

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assessed each student by the Students' Association to meet the expenses of the Students' Association, the Honor Council, and the student publications. This assessment is made with the approval of the Faculty and the Board of Trustees, but the payment of the fee is not compulsory. However, students who thus become members of the Students' Association are entitled to admission to all athletic contests of Rice Institute teams held in Houston, and they receive the weekly paper and the college annual.

Rooms in the residential halls for men, completely furnished exclusive of linen, may be had at prices ranging from eighty to one hundred and twenty-five dollars per year, five-eighths of the rental being paid when the lease is signed and the remainder paid in February. As the charge for table board will be made at actual cost, the monthly price, payable in advance, will probably vary during the year. Until October first, a blanket charge of one dollar and five cents per day will be made.

These residential halls are of absolutely fireproof construction, heated by steam, lighted by electricity, cleaned by vacuum apparatus, and equipped with the most approved form of sanitary plumbing, providing adequate bathing facilities on every floor. The rooms will be let in the order of applications received. Inasmuch as each year the accommodations now adequate to house some three hundred and fifty men have all been engaged before the opening of the session, reservations should be made early. Diagrams showing the floor plans will be sent to any one who may be interested on application to the Office of the Bursar.

Accommodations for the residence of young women on

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the university grounds are not available at present. However, while attending to their duties on the campus the young women of the university have access to adequate rest rooms, tennis courts, and other forms of recreation under the constant supervision of Mrs. Sara Stratford, Adviser to Women. Information concerning desirable places of residence for young women students may be had at the Office of the Bursar.

COURSES OF INSTRUCTION FOR DEGREES

ALTHOUGH it is the policy of the institution to develop its university programme rather more seriously from the science end, there are also being provided facilities for elementary and advanced courses in the so-called humanities, thereby enabling the Institute to offer both the advantages of a liberal general education and those of special and professional training. Extensive general courses in the various domains of scientific knowledge will be available, but in the main the programme consists of subjects carefully coördinated and calling for considerable concentration of study. These programmes have been so arranged as to offer a variety of courses in arts, in science, in letters, and in their applications to the several fields of engineering, architecture, and other regions of applied science, leading after four years of undergraduate work to the degree of Bachelor of Arts. Degrees will also be offered in architecture and in chemical, civil, electrical, and mechanical engineering. Furthermore, for the degrees of Master of Arts, Doctor of Philosophy, and Doctor of Engineering, every facility will be afforded properly

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qualified graduate students to undertake lines of study and research under the direction of the Institute's resident and visiting professors.

The academic programmes of study leading to the degree of Bachelor of Arts after four years of study are of a common type for the first two years, but for the third and fourth years are differentiated into two forms: first, general courses leading to the degree of Bachelor of Arts, either with some grade of distinction or without special mention, and, second, honours courses leading to the degree with honours in certain subjects. These two types will be referred to in the sequel as general courses and honours courses respectively.

The general course leading to the degree of B.A. has been arranged to give thorough training to those students who are seeking university instruction in literary and scientific subjects either as a part of a liberal education or as preliminary to entering upon a business or professional career. The general course therefor involves the study of several subjects up to a high university standard but does not include a highly detailed specialized study of any one subject such as is necessary before research work or university teaching can be profitably undertaken. Students wishing to specialize with a view to research work and university teaching may either complete an honours B.A. course and then proceed by graduate study to the degrees of M.A. and Ph.D., or they may first take a general B.A. course and after completing it proceed by graduate study to the higher degrees.

The attention of students intending to enter the profession of engineering or architecture is called to the great

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advantages in first taking a general or honours academic course before beginning special study in engineering or architecture. At present the Institute is not offering courses leading to degrees in law and medicine, but students looking forward to such careers will find in the earlier years of the B.A. course all the requirements for admission to many medical and law schools, provided suitable subjects are chosen. However, attention is called to the fact that several professional schools of law and medicine now require bachelor degrees for admission.

As has already been intimated, the course for the degree of B.A. extends over four years. During the first two years a considerable part of the work is prescribed, while during the last two years each student is allowed, within certain restrictions, to select the subject he studies. In the majority of the courses the formal instruction offered consists of three lectures a week together with laboratory work in certain subjects. Preliminary examinations for Freshmen and students on probation are held in December, examinations for all students are given in February and final examinations for all are held in June. Other examinations are given from time to time at periods determined by the instructors.

These examinations are conducted under a student honor system. In determining the standing of a student in each class both his work during the term and the record of his examinations are taken into account.

Of subjects included in the B.A. courses the following are now available:

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GROUP A

1. English
2. French
3. German
4. Italian
5. Latin
6. Spanish
7. Economics
8. Education
9. History
10. Philosophy
11. Architecture

GROUP B

1. Pure Mathematics
2. Applied Mathematics
3. Physics
4. Chemistry
5. Biology
6. Psychology
7. Chemical Engineering
8. Civil Engineering
9. Electrical Engineering
10. Mechanical Engineering

Candidates for the degree of Bachelor of Arts of the Rice Institute will be required to select studies from the preceding groups according to the yearly programmes exhibited below.

First Year

- (1) Pure mathematics
- (2) English
- (3) A modern language
- (4) A science
- (5) One other subject

Second Year

- (1) Pure mathematics or a science
- (2) English
- (3) A modern language¹
- (4-5) Two other subjects.

¹ Students who enter with credit in two modern languages may substitute another subject for (3) in the second year; on the other hand, students must take at least one second year language course for graduation.

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At the beginning of the third year students may elect to take either a general course or an honours course.

Third Year General B.A. Course

Four subjects, of which two must have been taken in the second year and one in both first and second. At least one subject from each of the groups A and B must be taken. Students will receive advice in the selection of their subjects.

Fourth Year General B.A. Course

Four subjects, two of which must have been taken in the third year and one in both second and third or in first and third. At least one subject from each of the groups A and B must be taken. However, students will be allowed to specialize in their senior year, provided they substitute an advanced course for the required group A or group B subject.

A student who wishes to become a candidate for a general B.A. degree should report his candidacy in writing at the beginning of the year in which he expects to take his degree.

To students who have completed a general four years' course the B.A. degree will be awarded either with some grade of distinction or without special mention.

HONOURS COURSES

The third and fourth year honours courses are intended for students who wish to specialize in particular branches of knowledge with a view to research work or teaching or later professional studies.

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It is suggested that students who wish to prepare themselves for scientific careers in physics, chemistry, mathematics, or the scientific developments of engineering, enroll themselves for honours in physical sciences, in which a course in mathematics, physics, and chemistry is taken every year. The courses that form an essential part of the program are the following: Mathematics 210, 220, 310; Physics 200, and two from among courses, 300, 310, 320, 330; Chemistry 220, 300, 310. Besides these, one or two other advanced courses may be chosen in fields in which the student is especially interested. The program is further supplemented by systematic reading and thesis work.

In view of these special objects the requirements in such courses will be more severe than in the general courses in the same subjects. For this reason it is recommended that students exercise due caution and seek advice before electing to take an honours course. Only those students who have shown in their first and second years that they are especially well qualified will be permitted to take an honours course. A student proposing to take an honours course must satisfy the department concerned that he is qualified to proceed with the study of that subject. He will be required to take the lectures and practical work provided for honours students in that subject during each of the two years and in addition certain courses in allied subjects. It is a decided advantage for students in honours courses to have had some preparation in French or German before entering college.

In 1928-29 honours courses will be available as follows:

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- (1) Pure and applied mathematics
- (2) Theoretical and experimental physics
- (3) Physical sciences
- (4) Modern languages and literatures
- (5) Biology
- (6) Chemistry
- (7) Economics and mathematics
- (8) English
- (9) History

The following programme in honours courses in physics may be taken as typical of such courses:

Third year, four subjects: (1) mathematics (2) and (3) Physics 300 and 320, or 310 and 330, (4) one other subject.

Fourth year, four subjects: (1) mathematics, (2) and (3) Physics 300 and 320, or 310 and 330, (4) one other subject.

A student who wishes to become a candidate for a degree with honours should report his candidacy at the beginning of his junior year and renew his application at the beginning of his senior year.

The degree of B.A. with honours will be awarded at the end of the fourth year to students who have completed an honours course. Candidates for honours who fail may be excused such part of a general course as may be equivalent to the work they have done. Candidates for honours who are not making satisfactory progress may be required to discontinue their honours course and may be excused such part of a general course as may be equivalent to the work they have done.

For courses leading to the degree of Bachelor of Science, see pages 89-104.

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A student who has completed a general or an honours course for the B.A. degree may obtain the Master of Arts degree after the successful completion of one year of graduate work.

A candidate for the M.A. degree must elect a principal subject, and submit his schedule in writing when he reports his candidacy. Such schedule must represent the equivalent of four advanced courses to be passed with high credit. The work shall consist of (*a*) personal investigation, the results of which must be submitted as a thesis, and (*b*) at least two advanced courses of lectures, one of which must be a graduate course in the principal subject.

For courses leading to the degree of Master of Science, see page 89.

A student who has completed a course for the B.A. degree may be admitted as a candidate for the degree of Doctor of Philosophy. In addition to high attainment, preparation for the Ph.D. degree involves usually at least three years of graduate work. Candidates for the degree must submit a thesis and pass a public examination. The thesis must present a distinctly original contribution to the subject. It must be published in an accredited journal or series, and fifty printed copies must be deposited in the Institute Library.

Candidates who successfully complete the first four years of the engineering course will receive the degree of Bachelor of Science in a specified branch of engineering. This degree will be awarded with distinction to students whose work is of a high standard. Candidates who successfully complete the five-year engineering course will receive the

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degree of Ch.E., C.E., E.E., or M.E. according to the branch of engineering taken. Under requirements conforming to those for the M.A. degree, namely, high standing and a thesis, the M.S. degree in a specified branch of engineering may be awarded.

Candidates who successfully complete the five-year course in architecture will be awarded the degree of Bachelor of Science in Architecture. Students in architecture who satisfy all the requirements for the degree of M.A. may elect to take that degree if they prefer.

STANDING IN SCHOLARSHIP OF UNDER-GRADUATE STUDENTS

SCHEDULE of Undergraduate Students.—The regular schedule of undergraduate students is five courses in the Freshman year, five courses in the Sophomore year, four courses in the Junior year, and four courses in the Senior year. The regular schedules for students of Engineering and Architecture may be found in these Announcements beginning on pages 92 and 105 respectively. Admission to less than the regular schedule is rarely granted, and then only in the most exceptional circumstances. One extra course may be taken in the second year and one in the third year by students who are not on probation. Deficiencies of the first two years must be removed before the year in which a student is a candidate for a degree, and may not be removed by extra courses in that year.¹ An excess schedule must be reduced if a student fails to attain a grade of III or better in three courses, or if he fails to pass any course without at the same time doing

¹ This regulation applies to students who entered in September, 1921, and later.

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work of exceptional quality in his other courses. No credit is given toward graduation for less than a full year's course in any subject, but a course which has been dropped by permission after the February examinations and in which a student's standing is satisfactory may be carried to completion in a succeeding year. Summer school courses will be accepted to remove not more than one Freshman or Sophomore deficiency. To remove a college deficiency no credit will be given for a course unless it is the equivalent in content and quality of a full year course at the Institute.

Examinations.—All courses at the Rice Institute are year courses. Preliminary examinations are given to Freshmen and students on probation in December. Regular written examinations are given to all students in February and at the close of the academic year in June. In Junior and Senior courses (listed as 300 or 400 courses) the June examinations cover the work of the whole year. In elementary courses (listed as 100 or 200 courses) examinations cover the work done from the time of the preceding examination.

Dropping of Students for Deficiencies in Scholarship.—A student will be required to withdraw from the Institute if he fails in as much as one-half of the work of his schedule. He will also be dropped for failure to come off probation within one year, or for poor scholarship due to absences from the exercises of his schedule. Any student who withdraws from the Institute within five weeks of the beginning of any regular examination period on account of failure in his courses will be regarded as dropped from the Institute.

A student dropped from the Institute is not entitled to

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readmission. Exceptions may be made and a student granted readmission on presentation of satisfactory evidence that previous deficiencies have been removed. Dropped students, when allowed to return, are received only on probation. Students who have been dropped twice are not entitled to readmission.

Probation.—A student who is carrying five courses will be placed on probation if among his grades for the term there are two V's¹ or no grade better than IV. A student who is carrying four courses will be placed on probation if he has one V and one other grade below III, or has failed to obtain a grade of III or better in at least one course. A student with fewer than four courses will be placed on probation if he has one V, or if he does not obtain at least two grades of III or better. Probation is terminated only at regular examination periods and must be terminated with one year's time or the student will be dropped from the Institute. A student who is on probation may also be dropped at any time during the probation period for inattention to the requirements of his schedule. A student who is on probation is not permitted to hold any elective office, or to serve as editor or business manager of a college publication.

Promotion.—To attain Sophomore standing, a student must have obtained in four of the five courses of the Freshman year, passing grades of which two must have been III or better. To attain Junior standing, a student must have obtained in at least nine of the ten courses of the Freshman and Sophomore years, passing grades of

¹ The symbols have the following meanings: I Very high standing, II High standing, III Medium standing, IV Low standing, V Failure.

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which four must have been III or better. To attain Senior standing, a student must have obtained passing grades, of which six must have been III or better, in at least thirteen courses of the five courses of the Freshman year, the five courses of the Sophomore year, and the four courses of the Junior year, required for full Senior standing. To obtain the degree of Bachelor of Arts, a student must have obtained passing grades, of which eight must have been III or better, in five Freshman courses, five Sophomore courses, four Junior courses, and four Senior courses, required for the first degree. Attention is called to the fact that this four years' course is built up by years. Accordingly four courses of the Freshman and sophomore years respectively will not be credited as the equivalent of four courses of the Junior and Senior years respectively, a higher standard and wider range of collateral work being required of Juniors and Seniors who elect in either of those years an elementary subject of the Freshman and Sophomore years.

No student shall attain Sophomore, Junior, or Senior standing in Engineering and Architecture who lacks more than one course of the standard schedule required for full standing in those years.

SUBJECTS OF INSTRUCTION FOR 1928-29

OF the courses to be offered during the scholastic year 1928-29 it is possible to announce those described below. The numbers designating the courses have the following signification: courses whose numbers begin with 1 are open

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to all students of the Institute; courses whose numbers commence with 2 are open to Sophomores, Juniors, and Seniors; those beginning with 3 are open to Juniors and Seniors; those beginning with 4 are Senior courses. Unless otherwise indicated, all courses consist of at least three exercises a week. For each course the days of the week and the hours have been indicated.

ENGLISH 100. The theory and practice of English composition, and the study of fundamental literary forms. Required of Freshmen. The primary purpose of the course is to give students the command of written English which is necessary for later work in college. A secondary but still important purpose is to examine the chief types of prose and poetry, as a foundation for further courses in literature or for private reading.

M W F 8:00, 9:00 or 11:00 or
T Th S 8:00, 9:00, 10:00 or 11:00

ENGLISH 200. Outlines of the history of English Literature, with collateral reading of authors representative of the various periods.

M W F 10:00

ENGLISH 300. A study of the English Drama, exclusive of Shakespeare, from its beginnings in the Middle Ages to the time of Goldsmith and Sheridan.

T Th S 12:00

ENGLISH 320. Exposition and Argumentation. The study of contemporary problems in society and government as they appear in the expository essay, and later of the principles of argument and debate, the collection and weighing of evidence, fallacies, refutations. Themes, briefs, conferences.

M W F 8:00

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ENGLISH 330. Advanced Writing. Themes and conferences. Emphasis will be laid on such types as the informal essay and the short story. This course is intended for students who have already shown some aptitude in writing. T Th S 11:00

ENGLISH 340. The English Novel, with especial reference to the chief novelists of the nineteenth century. (Not offered 1928-29.)

ENGLISH 350. A study of Greek and Latin Literature in the best available translations. Considerable emphasis will be laid on the debt of modern civilization and literature to classical antiquity. M W F 12:00

ENGLISH 380. A study of Poetry. Ancient and modern theories; development of types in English, with chief attention to the Lyric. T Th S 8:00

ENGLISH 400. Shakespeare and Modern Drama. A systematic study of Shakespeare with especial emphasis on the tragedies, followed by a rapid survey of modern drama. Open only to Seniors. M W F 9:00

ENGLISH 410. Eighteenth-century Prose and Victorian Literature. (Alternates with English 420.) M W F 11:00

ENGLISH 420. Eighteenth-century Poetry, and Nineteenth-century Literature, from the publication of the *Lyrical Ballads*, 1798, to Queen Victoria's accession, 1837. (Alternates with English 410. Not offered 1928-29.)

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ENGLISH 430. An introductory course in Old English, followed by a careful reading of Beowulf. (Alternates with English 440. Not offered 1928-29.)

ENGLISH 440. Chaucer. A close reading of the principal works, with emphasis both on linguistic and literary values. (Alternates with English 430.) Hours to be arranged.

Requirements for honours course in English: four courses in English; two courses in Modern Languages, preferably French, German, or Italian; two courses in philosophy or history; all to be Junior or Senior courses and to be passed with high grades. Individual schedules and quality of work must be satisfactory both to the department and to the Committee on Honours Courses and Advanced Degrees.

FRENCH 100. First Year French. Oral exercises, dictation, grammar, composition, and study of simple French texts.

M W F 8:00, 10:00 or 11:00 or

T Th S 8:00, 9:00 or 10:00

FRENCH 200. Second Year French. Oral exercises, dictation, review of grammar, composition, study of representative authors, supplementary reading under the supervision of the instructor. T Th S 10:00 or 11:00

FRENCH 300. Third Year French. Composition and study of modern French texts with special emphasis on the syntax and the difficulties of the French language. A considerable amount of outside reading will be required. Reports and essays in French. M W F 8:00, 12:00

FRENCH 320A. A survey of the entire History of French Literature, with its social background. Open to students

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who have passed French 200. The course is intended for students of English and History as well as for those who desire to specialize in French. Lectures in English.

M W F 10:00

FRENCH 320B. A survey of the entire History of French Literature, with its social background. Open to students who have passed French 200. The course is intended for students of English and History as well as for those who desire to specialize in French. Lectures in French.

M W F 9:00

FRENCH 410. Fourth Year French. Cours de Style. Open to students who have passed French 300 or 310 with a grade of III or better. Themes and translations into French. Analysis of style of French writers from the seventeenth century to the twentieth. French versification.

T Th S 8:00

FRENCH 420. French Classicism. Open to students who have passed French 300 or 310 with a grade of III or better. Students must also have passed French 320 with a grade of III or better or else take French 320 at the same time as French 420. Lectures, collateral readings, reports, and essays. Conducted in French.

M W F 12:00

FRENCH 430. The nineteenth century drama.

T Th S 9:00

FRENCH 500. Seminar. The nineteenth century novel.
Hours to be arranged.

Requirements for Honours Course in French: French 300 or 310, 320, 410, 420, and 430 passed with high credit (grades of I or II). Individual schedules and quality of

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work must be satisfactory both to the department and to the Committee on Honours Courses and Advanced Degrees.

GERMAN 100. Elementary German. Pronunciation, grammar, dictation, conversation, translation, composition. Reading of a book. M W F 8:00 or 10:00 or

T Th S 8:00, 9:00 or 10:00

GERMAN 200. Second Year German. Introduction to a knowledge of Germany and the Germans, including a short survey of German literature. Reading of two books. German script, grammar review, discussion and composition in German. M W F 11:00 or T Th S 11:00 or 12:00

GERMAN 300. Lectures in German on Classical German Literature from Klopstock to Goethe. Study of eighteenth century classical works. Collateral and outside reading. German phonetics. Composition. The work will be carried on mainly in German. (Alternates with German 310. Not offered in 1928-29.)

GERMAN 310. Lectures in German on German literature in the nineteenth and twentieth centuries. Study of nineteenth and twentieth century works. Collateral and outside reading. German syntax. Composition. The work will be carried on mainly in the German language. (Alternates with German 300.) T Th S 8:00

GERMAN 400. Lectures in German on German literature from its beginnings down to Gottsched. Study of Walter von der Vogelweide's poems (or of the Nibelungenlied or Gudrunlied). Survey of the history of the German language including an introduction into Middle High German.

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Advanced exercises in the oral and written use of the German language. The work of the course will be carried on in German. (Alternates with German 410. Not offered 1928-29.)

GERMAN 410. Goethe's Life and Works. Special study of Faust. Literary translation, essays, discussions, and debates. The work of the course will be carried on in German. (Alternates with German 400.) T Th S 9:00

ITALIAN 300. Open to students who have had at least two years of French, Spanish or Latin. Oral exercises, grammar and composition and reading of representative Italian authors. M W F 11:00

ITALIAN 400. Advanced Italian. Reading, composition, and conversation. Prerequisite: Italian 300. T Th S 12:00

SPANISH 110. Intermediate Spanish. This course presupposes a knowledge of elementary Spanish (equivalent to one year with high credit or two years of high school Spanish). Oral exercises, dictation, grammar, composition, translation and study of modern Spanish texts.

M W F 10:00 or T Th S 11:00

SPANISH 200. Second Year Spanish. Oral exercises, review of grammar, composition, outside reading under the supervision of the instructor, and reports. Open to students who have completed three years of high school Spanish or Spanish 110.

M W F 8:00 or T Th S 10:00 or 11:00

SPANISH 300. Third Year Spanish. Open to all students who have completed Spanish 200. Review of gram-

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mar, composition, essays, study of representative authors, collateral readings and reports. M W F 8:00 or 12:00

SPANISH 310. A rapid beginning course in Spanish for Juniors and Seniors who have already taken a regular course in another Romance Language or in Latin. Oral exercises, grammar, and composition. M W F 12:00

SPANISH 320. Survey of the History of Spanish Literature. Open to Juniors and Seniors who have taken Spanish 300 or 330 and to Sophomores upon special recommendation. M W F 8:00

SPANISH 330. Commercial Spanish. Open to students who have already taken Spanish 200 or 310. A general survey of the economic conditions in Spain and in Latin American countries. Reading of reviews and bulletins, reports, and practical exercises. T Th S 8:00, 9:00

SPANISH 410. Hispano-American Civilization and Literature. Open to students who have already taken Spanish 300 or 330. Lectures, collateral readings, reports and discussions. Conducted in Spanish. M W F 10:00

SPANISH 420. Nineteenth century literature. Open to students who have already taken Spanish 320. Conducted in Spanish. M W F 9:00

Honours Courses in Spanish may occasionally be granted to students who have done exceptionally good work in Spanish and whose work in another language has been of high standing. The Spanish courses required are: Spanish 300, 320, 330, 410 and 420. Individual schedules

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and quality of work must be satisfactory both to the department and to the Committee on Honours Courses and Advanced Degrees.

LATIN 100. Review of grammar, translation and composition. A short introduction to Roman History and mythology. A study of Roman life in the age of Cicero.

Hours to be arranged.

LATIN 200. Translation at sight, prose and composition. A study of Prosody. A general introduction to Roman literature.

Hours to be arranged.

GREEK 300. Introduction to Greek Literature. Reading of Homer, Plato, and the Bible. (Not offered in 1928-29.)

MATHEMATICS 100. Elementary Analysis. Trigonometry, analytic geometry, and introduction to calculus. This course is required for Freshmen because it forms a necessary introduction to work in mathematics and pure and applied science, and assists the students in developing habits of self criticism in thinking and writing. As one of the most modern of sciences and, at the same time, one of the most ancient of humanities, mathematics is regarded as an integral part in any general education.

In order to avoid an abrupt change from secondary school to university instruction, the course is given in two-hour periods, three times a week. In this way students may obtain individual assistance when necessary. A large part of the work is done in class; nevertheless, this method of instruction is devised to lead the student to do his work very largely by himself.

M W F 11:00-1:00

T Th S 11:00-1:00

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MATHEMATICS 0. Elementary Algebra. This course begins about January first. It does not count towards a degree, since it contains nothing which is not a part of the requirement for entrance to the Institute. This course is intended and required for any student who has to drop Mathematics 100 through lack of knowledge of high school mathematics. Successful completion of the course is necessary in order that such a student may register again in Mathematics 100.

MATHEMATICS 200. Differential and Integral Calculus. Elements of differential equations, differentials, definite integrals, infinite series, and their applications, especially to mechanics. Prescribed for engineers who do not take Mathematics 210.

This course continues the work of Mathematics 100 in calculus and analytic geometry, with systematic applications to Newton's laws of motion and calculation of moments of forces and of inertia, centers of gravity, etc.

Students who have considerable facility in mathematical reasoning should register for Mathematics 210.

T Th S 9:00-12:00

MATHEMATICS 210. Differential and Integral Calculus. This course covers the ground of Mathematics 200 but is more complete and goes further. It is open to students who obtain high grades in Mathematics 100, or otherwise satisfy the instructor of their fitness to take the course.

Students may make use of the two hour periods assigned to the course, but are not required to attend the second hour if they prefer to do more of their work outside. A

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feature of this course is the writing of theses on the applications of mathematics to science, engineering, and philosophy, so that the student shall have practice in expressing himself in clear English. T Th S 9:00-12:00

MATHEMATICS 220. Algebra and Mechanics. Solutions of equations, vectors, invariants, determinants, and interpolation; systematic statics and parts of dynamics. This course, required for engineers, fits the student with the algebraic technique necessary for the applications, and concerns itself with the fundamental principles of mechanics, and applications to machines and structures. It may be counted as a junior course if the student makes studies of additional thesis and problem subjects. T Th S 8:00

MATHEMATICS 300. Advanced Calculus and Dynamics. Differentiation and integration of functions of several variables, differential equations, Fourier series, systematic dynamics. This course or Mathematics 310 should be taken by students whose major interest lies in science or engineering; it is open to those who have passed Mathematics 200 and 220, or otherwise satisfy the instructor of their fitness to take it. M W F 8:00

MATHEMATICS 310. Advanced Calculus and Dynamics. Students with considerable facility in mathematical reasoning should take this course rather than Mathematics 300, the ground of which it covers. Such students may take Mathematics 220 during the same year. Opportunity to write theses is given. M W F 8:00

MATHEMATICS 400. Theory of functions, real and complex variable. The important functions of analysis and modern general methods. Hours to be arranged.

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MATHEMATICS 420. Differential and Integral Equations. Boundary value problems. Groups. (Not offered in 1928-29.)

MATHEMATICS 500. Theory of functions of a complex variable. The algebraic functions and their integrals, functions of two or more complex variables and differential equations. Hours to be arranged.

MATHEMATICS 510. Theory of functions of a real variable. Summable functions, Lebesgue and Stieltjes integrals, general integrals, functions of point sets and of plurisegments; Fourier series. Hours to be arranged.

MATHEMATICS 530. Contemporary Mathematics. A seminar course on research being carried out by contemporary mathematicians. The work of representative mathematicians will be presented in such a way as to make their publications accessible to students.

Hours to be arranged.

APPLIED MATHEMATICS 310. Finance, statistics and probability. Mathematical theory of investment, analysis of statistics as applied to economics and biology, theory of probability. M W F 12:00

APPLIED MATHEMATICS 500. Advanced Mechanics and Relativity. This course assumes some knowledge of differential geometry, and gives the theory of Einstein and Weyl, based on the absolute calculus of Ricci and Levi-Civita. Hours to be arranged.

APPLIED MATHEMATICS 510. Theoretical Economics and the Calculus of Variations. In this course the theory

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of maxima and minima of integrals and functionals is developed and applied to a systematic exposition of economic theory. Hours to be arranged.

APPLIED MATHEMATICS 520. Celestial Mechanics and Cosmogony. Planetary motion, forms of equilibrium of rotating and radiating masses, and the evolution of stellar systems. Hours to be arranged.

Besides these courses as listed above, to be given during the academic year 1928-29, others may be given to suit the needs of students. Reading courses are also offered in analysis, geometry, and applied mathematics in connection with research in those fields.

PHYSICS 100. A course of one experimental lecture, two recitations, and three hours of practical work per week on experimental dynamics, heat, sound, light, magnetism, and electricity. This course is intended for those who wish to obtain some general knowledge of the principles of natural philosophy on which the modern applications of science to human activities are based. The scientific method of dealing with facts and theories is explained and made familiar by numerous experimental demonstrations and laboratory exercises. For the practical work thirty complete sets of apparatus are available for simple experiments in heat, light, sound, mechanics, magnetism, and electricity. Students taking Physics 100 must have taken or be taking Mathematics 100.

T Th S 10:00 Laboratory T W or Th 2:00-5:00

PHYSICS 200. A course of two lectures and one recitation, and three hours of practical work per week on dynamics,

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electricity, and magnetism. This course with Physics 100 makes up a complete course on the principles of physics which is required of all engineering students and should be taken by students intending to specialize in physics, chemistry, medicine, law, biology or mathematics. In this course the fundamental principles of electrical theory are explained and illustrated, including the elementary theory of direct and alternating currents, electric transmission of power, wireless telegraphy, Roentgen rays, the electrical properties of gases, and other modern developments. In the Laboratory the students are taught how to make measurements of all the important electrical quantities such as current, resistance, potential, capacity, magnetic intensity, magnetic properties of iron and steel and electrochemical equivalents, etc. Twenty-five complete sets of apparatus are available for this work. Students taking Physics 200 must have completed Mathematics 100 and must take Mathematics 200 or 210 at the same time as Physics 200.

M W F 9:00 Laboratory F 2:00-5:00 S 9:00-12:00

PHYSICS 300. A course of three lectures and three hours of practical work per week on properties of matter, and physical optics. This course and Physics 310, 320, and 330 together make up a more advanced course on physics, supplementing the elementary work done in Physics 100 and 200. The laboratory work includes exact measurements of such quantities as elastic properties of metals, surface tension of liquids, viscosity of liquids, mechanical equivalent of heat, conductivity for heat of solids and liquids, vapor pressure of liquids, temperatures

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with resistance thermometers, thermocouples and radiation pyrometers, and experiments on spectroscopy, interference, diffraction, and polarization of light. Students taking this course must have completed Mathematics 200 or 210.

M W F 9:00 Laboratory M 2:00-5:00

PHYSICS 310. A course of three lectures and three hours of practical work per week on electricity. This course includes a study of the electrical properties of gases, including cathode and positive rays, Roentgen rays, thermionics, and radioactivity. Also, electric oscillations and electro-magnetic waves, three electrode tubes and their applications to wireless telegraphy and telephony. Students taking this course must have completed Mathematics 200 or 210. (Not offered in 1928-29.)

PHYSICS 320. Three lectures per week on mechanics including general theory of vector fields, of vibrations, and of potential. Also the theory of the electro-magnetic field and of light.

M W F 10:00 Laboratory Th 2:00-5:00

PHYSICS 330. Chemical Physics. Three lectures per week on thermodynamics, including chemical equilibrium and affinity, quantum theory of specific heats, radiation and spectra, osmotic pressure and properties of solutions, theory of voltaic cells, etc. Students taking this course must have completed Mathematics 200 or 210. (Not offered in 1928-29.)

PHYSICS 340. About ten lessons on glass blowing of one hour each. Limited to twelve students. This course

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will be given from time to time as required. No credit is given for this course.

PHYSICS 400. Physics Colloquium. One meeting a week at which present-day researches in physics will be discussed.

PHYSICS 500. Theory of heat conduction. Electromagnetic theory, electron theory, special and general theories of relativity. Hours to be arranged.

PHYSICS 510. Kinetic theory, electricity in gases, X-rays, and radioactivity.

PHYSICS 520. Higher dynamics, thermodynamics, and quantum theory and wave mechanics.

PHYSICS 530. Research work in physics.

Attention is invited to the fact that many opportunities exist at the present time for persons possessing adequate training in physics and mathematics to engage in industrial research. A large number of industrial corporations now maintain research laboratories for the carrying on of such work. Among these may be mentioned the General Electric Company, the Western Electric Company, the Eastman Kodak Company, the Bureau of Standards, and others. Students desiring to qualify for positions in such establishments should take the Honours course in physics and then, if possible, take a graduate course in physics leading to the M.A. or the Ph.D. degree. However, positions in research laboratories and at the Bureau of Standards are open to men who have taken the B.A. degree with honors in physics. The Honours course in

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physics may be taken up by students who have completed the first two years of an engineering course as well as by academic students. Several fellowships in physics are available at the Institute to enable students to take graduate work in physics.

CHEMISTRY 100. Introductory Chemistry. Two lectures, one recitation and six hours' laboratory work weekly. A general introductory course dealing with the fundamental phenomena and principles of the science. During the first half-year the laboratory exercises are arranged to verify and illustrate the principles and facts which are discussed in the lectures. During the last half-year the laboratory work deals with the general principles and methods of qualitative analysis.

M W F 10:00 Laboratory M and Th or W and F 2:00-5:00

CHEMISTRY 200. A Survey Course in General Chemistry. Three lectures and three hours' laboratory work weekly. A second year course arranged primarily for students who are not specializing in chemistry. The first part of the course is devoted to a study of chemical processes associated with natural phenomena. So far as possible the evolutionary outline is followed: astro-chemistry, geo-chemistry, plant and animal chemistry. The second part of the course includes a systematic study of the application of chemistry to the more important industries and arts. The aim of the laboratory work is mainly to illustrate the subject matter of the lectures, although attention is paid also to the development of laboratory technique.

Since this course does not fulfill the requirements in

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organic chemistry for pre-medical students, the latter will take Chemistry 300. Chemical engineers and academic students specializing in chemistry will take Chemistry 220.

M W F 11:00 Laboratory T or F 2:00-5:00

CHEMISTRY 220. Quantitative Analysis. Three lectures and nine hours' laboratory work weekly. This course aims to familiarize the student with the fundamental principles of analytical chemistry. Special emphasis is placed on chemical mathematics and stoichiometry. The laboratory work embodies a study of the representative processes in the quantitative determination of the common metals and acids, covering the methods of gravimetric, volumetric, and electroanalysis. Throughout the work particular attention is given to general analytical technique.

M W F 12:00 Laboratory M T Th 2:00-5:00

CHEMISTRY 230A. Industrial Geology and Blow Pipe Analysis. Two lectures and three hours' laboratory work weekly. This course is arranged especially to meet the requirements of the Chemical Engineer. It consists of (1) a brief survey of historical geology that attempts to explain the origin of formations on the earth, (2) a detailed examination of the economic rocks, minerals and other natural resources, and (3) a comprehensive study of the surface features of the earth, with emphasis on the forces and agents which have produced and are producing these results.

The laboratory work consists of the qualitative and quantitative analysis of minerals and rocks together with their identification and classification. Prerequisite: Chemistry 220 or taking 220. T Th 11:00 Laboratory W 2:00-5:00

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CHEMISTRY 230B. Industrial Geology and Blow Pipe Analysis. A course for academic students. Similar to Chemistry 230A except for six hours' laboratory work weekly. T Th 11:00 Laboratory W F 2:00-5:00

CHEMISTRY 300. Elementary Organic Chemistry. Three hours' lecture and recitation, and six hours' laboratory work weekly. The course is designed to cover the introductory chemistry of the principal classes of organic compounds, and to present the more important theories relating to their structure and reactions. Prerequisite: Chemistry 200. M W F 8:00 Laboratory M Th 2:00-5:00

CHEMISTRY 310. Physical Chemistry. Two lectures, one recitation and six hours' laboratory work weekly. A systematic presentation of modern chemical theories and their applications. Prerequisites: Chemistry 220, Physics 200 or taking Physics 200.

T Th S 8:00 Laboratory W F 2:00-5:00

CHEMISTRY 410A. Colloid Chemistry. A course for chemical engineers. Two lectures and three hours' laboratory work weekly. The course treats of the theories of colloid chemistry and their applications in biology and the arts. Prerequisite: Chemistry 310.

M W 11:00 Laboratory M W 9:00-11:00

CHEMISTRY 410B. Colloid Chemistry. A course for academic students. Similar to Chemistry 410A except six hours' laboratory work weekly.

M W 11:00 Laboratory M W 2:00-5:00

CHEMISTRY 420A. Electrochemistry. A course for chemists and chemical engineers. Two lectures and three

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hours' laboratory work weekly. The course includes the principles and applications of the accurate electrochemical measurements which are employed in industries and in research, the electrical control of chemical reactions, the electron theory of matter, of valence, and of chemical reaction. Prerequisite: Chemistry 310.

T Th S 10:00 Laboratory W or F 2:00-5:00

CHEMISTRY 420B. Electrochemistry. A course for academic students. Similar to Chemistry 420A except six hours' laboratory work weekly.

T Th S 10:00 Laboratory W F 2:00-5:00

CHEMISTRY 430. Chemical Engineering. Three lectures and six hours' laboratory work weekly. In this course are considered the principles upon which the mechanical operations involved in the chemical manufacturing industries depend, together with a study of the types of equipment available for such operations and the kind of work for which each is best adapted. The application of the principles is illustrated both by discussion in the class-room and by the solution of typical problems. Among the subjects considered are applied stoichiometry, furnaces and combustion, the flow of heat, crushing and grinding, the separation of solids, extraction, filtration, distillation, evaporation, the flow of fluids, humidification, and air drying. The laboratory course involves experiments in commercial analysis, in instrument calibration, in measurement of flow of liquids and gases, in evaporation, filtration and drying, and in electric furnace work. Prerequisite: Chemistry 310.

M W F 8:00 Laboratory M and Th 2:00-5:00

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CHEMISTRY 440. Advanced Organic Chemistry. The work of the first half-year is devoted to qualitative organic analysis, requiring one hour of conference and nine hours of laboratory weekly. This portion of the course embodies a systematic procedure for the separation and identification of pure organic compounds. It aims to review, by actual laboratory contact, the important reactions of the main series of organic substances.

During the second half-year there will be three lectures per week on advanced organic topics, such as tautomerism, geometric and optical isomerism, chemistry of carbohydrates, chemistry of free radicals, terpenes, etc. The laboratory work of the second half-year requires six hours per week and is devoted to quantitative organic analysis (including combustion methods for carbon, hydrogen, and nitrogen, and the Carius method for the halogens) and to advanced organic synthesis. A short experimental research problem will be assigned each student in which he may apply the principles learned during the course. Prerequisite: Chemistry 300, Chemistry 310, or taking 310. Hours to be arranged.


CHEMISTRY 450. Advanced Analytical Chemistry. One lecture and six hours' laboratory work weekly. During the first part of the course experiments are given in the systematic analysis of complex substances such as minerals and alloys. The primary object of the course is the study and application of some special methods of quantitative analysis. These methods include micro-analysis, electro-metric analysis, X-ray analysis, and gasometric analysis. Prerequisites: Chemistry 220 and 310. Hours to be arranged.

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CHEMISTRY 460. Biochemistry. Three lectures and six hours' laboratory work weekly. During the first part of the year the course consists of the study of elementary biochemistry from a physico-chemical standpoint. The newer methods of blood, urine, and gastric analyses are investigated during the last half-year. This course is designed primarily for the chemistry student, and is not intended to replace similar courses given in medical schools. Prerequisites: Chemistry 220 and 300, and Biology 100.

M W F 11:00 Laboratory hours to be arranged.

CHEMISTRY 470. Experimental Problems. Chemical engineers and students who are specializing in chemistry may elect in their Senior year at least nine hours a week in experimental problems under the direction of some member of the staff of instruction.

 CHEMISTRY 480. History of Chemistry; Chemical Literature. One hour per week. A series of lectures is given during the first half-year on the history of chemistry, the purpose being to stress the important advances which have been made in chemistry and to acquaint the student with the chemists mainly responsible for them.

The second half-year is devoted to a study of chemical literature and its use. It is the aim of this portion of the course to demonstrate to the student the literature of chemistry, how it is arranged and made available, to give some practice in its use, and also to indicate the growth of the science. During this time a topic will be assigned to each student for complete library investigation. The report of this work will be submitted to the class by the

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student. This course is required for all Senior chemical engineers and Senior students specializing in chemistry.

W 12:00

CHEMISTRY 500. Chemical Research. Chemical engineers or students who are specializing in chemistry are expected in their fifth year to elect at least nine hours a week in research under the direction of some member of the staff of instruction.

CHEMISTRY 510. Adsorption. Lectures and conferences two hours per week. A course dealing with the nature and mechanism of adsorption and its relation to contact catalysis, the stability of colloidal solutions, emulsification, the permeability of membranes, photochemical sensitivity, etc. Given in 1928-29 and every third year thereafter.

Hours to be arranged.

CHEMISTRY 520A. Photo-chemistry and Catalysis. Two lectures weekly for one year. The course considers the chemical effects of light, the chemical production of light, catalysis and chemical reactivity from the experimental point of view. Modern atomic and molecular theories and the quantum theory of chemical activation are discussed. Given in 1927-28 and every third year thereafter.

Hours to be arranged.

CHEMISTRY 520B. The Phase Rule. Lectures and conferences two hours per week. This course deals with the principles underlying the phase rule and their application to the classification and investigation of equilibria. Consideration is given to one-component systems, two-component systems in which compounds are not formed, two-

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component systems in which compounds are formed, and three-component systems. Given in 1928-29 and every third year thereafter. Hours to be arranged.

CHEMISTRY 530. Industrial Chemistry. A continuation of Chemistry 430. This course consists of a more detailed examination of the basic laws of chemical engineering practice leading to the design and operation of plant equipment. The laboratory work consists of experiments leading to the formulation of laws governing the operation of apparatus set up in the industrial laboratory or designed and built to meet the needs of the individual problem at hand. Prerequisite: Chemistry 430.

Hours to be arranged.

CHEMISTRY 540. Selected Topics in Organic Chemistry. Two conferences per week. Discussion of such topics as: the electron theory of valency applied to organic chemistry; the effect of structure on the reactivity of organic compounds; the constitution of benzene; the chemistry of the heterocyclic compounds, etc., with special emphasis on recent work. A reading knowledge of French and German will be necessary as assignments will be made to the original literature. Given in 1928-29 and every third year thereafter.

Hours to be arranged.

CHEMISTRY 550. Sub-Atomic Chemistry. A seminar course. Consideration is given to those chemical phenomena which, according to modern atomic theory, are characteristic of and intimately related to the structure of atoms. The work of this course will necessitate considerable reading in French and German journals. Given in 1929-30 and every third year thereafter.

Hours to be arranged.

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CHEMISTRY 560. Advanced Biochemistry. This is a lecture course dealing with the important organic substances that are produced in plant and animal life. The physiological action, natural occurrence, and laboratory synthesis of substances such as adrenaline, thyroxin, insulin, hemoglobin, the alkaloids, the purines, and other compounds will be studied. Prerequisite: Chemistry 460. Given in 1927-28 and every third year thereafter.

Hours to be arranged.

CHEMISTRY 580. Chemistry Seminar. Meetings are held fortnightly at which modern researches in chemistry are presented and discussed by members of the chemistry staff and graduate students in chemistry. Attendance is open to all members of the Institute.

Students who desire to take their major work in chemistry should select their courses according to the following arrangement: First year, Chemistry 100; Second year, Chemistry 220 and 230; Third year, Chemistry 300 and 310; Fourth year, Chemistry 420 and one or more elective courses in chemistry. The related courses in mathematics and physics should also be taken during the first two years if possible.

In addition to the general requirements for advance degrees given on pages 45 and 46, the following specific requirements must be met by candidates taking their major work in chemistry.

For admission to full graduate standing, candidates for advanced degrees in chemistry must have completed general courses equivalent to Chemistry 100, 220, 300, and 310 in the Rice Institute and two additional advanced

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courses equivalent to two 400 courses in chemistry in the Rice Institute.

The courses for which graduate credit is given may be grouped as follows:

GROUP I

Chemistry 410 Colloid Chemistry
Chemistry 420 Electrochemistry
Chemistry 450 Advanced Analytical Chemistry
Chemistry 510 Adsorption
Chemistry 520A Photochemistry and Catalysis
Chemistry 520B The Phase Rule
Chemistry 530 Industrial Chemistry
Chemistry 550 Sub-Atomic Chemistry

GROUP II

Chemistry 440 Advanced Organic Chemistry
Chemistry 460 Biochemistry
Chemistry 540 Selected topics in Organic Chemistry

In addition to the thesis, candidates for the M.A. degree will complete three courses distributed as follows: one Group I course, one Group II course, and one approved 300 or 400 course in mathematics, physics, or biology.

In addition to the thesis, candidates for the Ph.D. degree will complete six courses distributed as follows: if specializing in general or physical chemistry, three Group I courses, two Group II courses, and Physics 420; if specializing in organic chemistry, three Group II courses, two Group I courses, and one approved 300 or 400 course in mathematics, physics, or biology. Before the beginning of the academic year in which the student expects to receive his degree, he must satisfy the members of the staff under

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whom he is working that he possesses a reading knowledge of scientific French and German. The first week in May of the last year of residence, the candidate will be given three-hour written examinations in general chemistry and organic chemistry.

Graduate assistants and fellows who devote as much as six hours per week to teaching will, in general, be expected to spend two years in residence for the master's degree and four years in residence for the doctor's degree.

BIOLOGY 100. About half the year is given to the study of human physiology in connection with the study of structure, both gross and microscopic. A brief survey of the general principles of infection and immunity is included. The other half of the year is given to a study of morphology, ecology, embryology, and physiology, both animal and plant. The evolutionary point of view is presented at the very start; and, wherever feasible, is made the basis for the presentation, or of the interpretation, of the subject-matter at hand. Emphasis is placed on such topics as are of human interest or application. Three lectures and one three-hour laboratory period per week.

M W F 9:00 Laboratory W Th or F 2:00-5:00

BIOLOGY 220. The first part of the year is devoted to a study of the relation of the insects and their allies to disease, including the rôle of insects in the transmission of disease, the examination of important disease-transmitting species, and the investigation of their life histories and methods of control. Following this, the animal parasites—including trematodes, cestodes, nematodes, protozoa and spirochetes—are taken up, special attention

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being given to methods of infection and prevention of infection with human parasites. Prerequisite: Biology 100.

M W F 11:00 Laboratory W or Th 2:00-5:00

BIOLOGY 240. Animal Taxonomy and Ecology. A course dealing with the natural history and ecology of animals, with special reference to local species. A study is made of the phylogeny, classification and taxonomy of both invertebrate and vertebrate groups, and of the structural characteristics useful in identification of groups and species; local species are identified by means of tabular keys. A study is made of the life histories, habits, habitats, and inter-relations of animals, the principles of geographic distribution, the economic importance of various groups and species, methods of control of pests, and principles of conservation and propagation of economically valuable forms. The course is designed to demonstrate the natural relations of animals to their environment, to each other, and to man, and to develop an intelligent interest and appreciation of wild animal life. Prerequisite: Biology 100.

M W F 12:00 Laboratory M 2:00-5:00

BIOLOGY 330. General Entomology. The first half of the year is devoted to a study of the morphology, physiology and metamorphosis of insects. The second half of the year is devoted to the taxonomy and life histories of the members of the various orders. Prerequisites: Two courses in biology.

M W F 11:00 Laboratory M 2:00-5:00

BIOLOGY 350. Comparative Anatomy and General Embryology. A comparative study of the early develop-

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ment of animals, with special reference to the higher vertebrates. The fundamentals of comparative adult vertebrate anatomy are also introduced as a foundation for the embryological studies. The principles and important results of experimental embryology are also discussed. Prerequisites: Biology 100 and one sophomore Biology course. (Not offered in 1928-29.)

BIOLOGY 360. Heredity and Evolution. The first part of the course is devoted to a discussion of the principles of heredity. Whenever practicable, cases of human inheritance are referred to and used in illustrating or in leading to the general principles. Topics discussed and interpreted from the viewpoint of genetics are twinning, regeneration, development, sexual and asexual reproduction. The study of evolution is taken up next. It includes a consideration of cosmic and geological evolution, the succession of animal and plant forms in time, including man's place in this process and his present and possible future evolution. Prerequisites: two courses in Biology.
M W F 10:00

BIOLOGY 370. General Bacteriology. Sterilization, preparation of media, and methods of cultivation; disinfection; nature and relationships of various types of microorganisms; introduction to bacteriology of air, soil, water, sewage, dairy products and other foods, and important human, animal and plant diseases; the principles of immunology and their application to preventive and curative medicine. Special emphasis on public health and hygienic aspects of the subject. A natural sequence to Biology 220.

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Open to upper-class students, and to sophomores by special permission of the instructor. Prerequisites: two courses in Biology and Chemistry 100. (Not offered in 1928-29.)

BIOLOGY 420. Cellular Biology. This course is very general in scope, including a study of all the important features of cell structure and activities, such as the constitution of protoplasm; its nutrition, metabolism, and mode of motion; irritability and the properties of nerve cells; the mechanism of development; youth and old age; and the physical basis of reproduction and heredity. Recent lines of experimental work in general physiology, embryology, and cytology will receive special attention. A knowledge of physics and of theoretical and organic chemistry is necessary. Three lectures a week, assigned reading, and reports. (Not offered in 1928-29.)

BIOLOGY 510. Special work in Biology. This course will consist of advanced work in special fields of biology and will be adapted to the needs of the particular student.

Hours to be arranged.

BIOLOGY 520. Biological Research. General principles and methods of research, and the working out of a special research problem, with thorough investigation of the literature bearing on the subject selected. Graduate course for students specializing in Biology.

PSYCHOLOGY 200. Introductory Psychology. The first half-year furnishes a general introduction to the study of the normal human mind; the nature, the problems, and the methods of a scientific psychology. The facts and laws

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of mental life, as indicated by experiment, are set forth, and the lectures are supplemented by classroom demonstration. This part of the course is planned to serve as a preparation for future work in the laboratory. The second half-year surveys the special fields of animal psychology, child psychology, differential psychology, the psychology of the abnormal, genetic psychology, social psychology, and psychotechnology. These topics are considered from different current psychological points of view.

T Th S 10:00

ECONOMICS 200. Elements of Economics. An introduction to the fundamental theories of economics and to their application, with special reference to the problems of money, banking, international trade, regional planning, business organization, the control of industry and the distribution of wealth.

T Th S 8:00

ECONOMICS 310. Economics for Engineers. An introduction to the principles of economics and their applications, with special reference to the economic problems encountered by engineers. Theoretical analysis is more mathematical, and more attention is given to cost analysis and to manufacturing and business problems than in Economics 200. Open to Chem. Engineering Students of Junior standing and other Engineering Students of Senior standing.

T Th S 11:00

ECONOMICS 420. A survey of the fundamentals of domestic and foreign marketing with special emphasis on the economic theory underlying our modern marketing structure. This course is developed from the viewpoints

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of national and international trade, the individual business, and the consumer. The following subjects will be presented: the economic basis of trade; historical review of commerce; specific problems of domestic marketing, such as channels of distribution, market functions, consumer demand, and criticism of our present distributive system. The latter half of the course will be primarily concerned with our development and conduct of foreign trade. Attention will be given to current tariff policies and to nationalistic trade development since the war. In addition, such specific topics as financing of foreign business, export sales management, and factors in assistance of trade building will be considered. Finally, the port of Houston will receive special treatment as a factor in foreign and domestic distribution. T Th S 12:00

ECONOMICS 500. Transportation and Public Finance. In this course the student is induced to apply and test his economic theory. The first half-year is devoted to the study of such aspects of railroad transportation as: railway finance, competition, ratemaking, valuation, and regulation. Public and private interests are critically considered. In the second half-year, theory and practise in taxation are studied historically and analytically, with special reference to the economic burdens, effect, and desirability of various methods. (Not offered in 1928-29.)

SOCIOLOGY 200. An introduction to Sociology. The course includes an analysis of the geographical and biological factors in social evolution, social psychology, and a study of the functions of citizenship. There is added a rapid survey of modern social problems such as those

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of poverty, industry, immigration, public health and delinquency. Students expecting to take this course are advised to take Biology 100, one course in college History, and Economics 200. M W F 11:00

BUSINESS ADMINISTRATION 200. Business Management. The promotion and organization of business enterprises and the administration of such enterprises in operation. The course considers in particular, marketing, financing, personnel management, risk-bearing, community and state relationships, accounting, and the interpretation of financial reports. T Th S 8:00, 9:00 or 11:00

BUSINESS ADMINISTRATION 300. Money and Banking. History of the currency. Organization and regulation of commercial and investment banks. The Federal Reserve System. Credit and instruments of credit, corporate securities, capitalization, reorganization, depreciation, and reserves. Open to students who have completed Business Administration 200 or Economics 200. T Th S 9:00

a survey of
~~EDUCATION 310.~~ History of Education. ~~A survey of~~
the development of educational theory and practice.
Prerequisites: One year of History in college, and Philosophy 210 or taking Philosophy 300. M W F 8:00

EDUCATION 410. Introduction to High-School Teaching. This course includes the study of the psychological principles of methods of teaching with especial reference to secondary schools, of the principles of secondary education, and of methods of teaching high-school subjects. Prerequisite: Psychology 200. M W F 10:00 or 11:00

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The Department of Education of the State of Texas will grant, under the Certificate Law of 1921, the following certificates to students of the Institute:

✓ 1. Four-year Elementary Certificate. An elementary certificate valid for four years will be granted to students who have satisfactorily completed five full courses, one of which must be in Education and bear on elementary teaching, another of which must be in English, and of which not more than two courses are in the same subject.

2. Six-year Elementary Certificate. An elementary certificate valid for six years will be granted to those who have satisfactorily completed two full years of college work, including two full courses in Education.⁽¹⁾

3. Permanent Elementary Certificate. A permanent elementary certificate will be granted to the holders of the six-year certificates after five years of successful teaching or after four years of successful teaching and one year of college work taken after the issuance of the certificate.⁽²⁾

7 4. Two-year High-School Certificate. A high-school certificate valid for two years (valid only in the elementary grades and in third-class and unclassified high-schools) will be granted to any student who has completed five full college courses, one of which is in Education, another of which is in English, and not more than two of which are in any one subject.

✓ 5. Four-year High-School Certificate. A high-school certificate valid for four years will be granted to any student who completes two years of college work, including two courses in Education, one of which bears on high-school teaching.

6. Permanent High-School Certificate. A permanent

[82]

(1) Says "two full course in professional training". Probably means course bearing on elementary education.

(2) This is not covered in this pamphlet. Only for normal school students.

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high-school certificate will be granted to those who have a B.A. degree (or any equivalent Bachelor's degree or higher academic degree) and have had two full courses in Education, one of which bears on high-school teaching, and who has completed three years (27 months) of successful teaching subsequent to taking the degree.

It should be noted that high-school certificates are valid for the elementary grades and the holder of an elementary certificate, based on two years of college work, can teach in third-class and unclassified high-schools.

HISTORY 110. Ancient Civilization. This course is intended as an introduction to historical methods of thinking as well as to the history and culture of the ancient world. The chief emphasis will be placed on the Greek city-states, the Hellenistic kingdoms, and Roman Imperialism, although some attention will be given to prehistory and the early Orient. The political history will form the central theme, but social, economic, religious and intellectual factors will not be neglected. Much attention is paid to the art and literature of ancient Greece and Rome.

T Th S 8:00

HISTORY 120. English History to 1485. This course will deal with the geographical, political, economic, and social factors of the period covered, with the necessary emphasis on literary materials. Events and institutions will be considered in their relationship to Europe generally, as well as to England.

M W F 10:00

HISTORY 130. Modern European History 1450-1789. This course traces the development of western Europe with emphasis upon movements: Renaissance, Reforma-

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tion, Counter-Reformation, and wars of Religion. The latter part of the course will deal with the rise of nationalism. M W F 12:00

HISTORY 210. English History from 1485. Constitutional and economic detail will supplement the political survey of this period. T Th S 12:00

HISTORY 230. Europe since 1789. This is a continuation of History 130. The revolutions against autocracy, the spread of democracy, the completion of nationalism, and the development of imperialism will be emphasized. Much attention will be given to the antecedents of the world war, the history of the war, and the situation in post-war Europe. T Th S 9:00

HISTORY 300. American History. The historical development of the United States, with special reference to the period since the adoption of the Constitution. T Th S 10:00

HISTORY 310. Constitutional Government. The origins and operation of constitutional government, the formation of public policy, and the conduct of public business in England, France, and the United States. M W F 10:00

HISTORY 320. The Development of European Culture, 300-1500. This course will attempt to trace the evolution of Western European civilization from the decline of the Roman Empire to the Sixteenth Century. Intellectual movements will be stressed throughout and correlated with social, economic, and religious factors to give the student a

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composite picture of the culture of this period. Frequent reference will be made to the antique Graeco-Roman basis, and Byzantine and Mohammedan contributions to the Latin West will be considered. Prerequisite: History 110; Philosophy 300 recommended. T Th S 11:00

HISTORY 420. Mediæval Sources. Survey and translation of typical historical sources of the Middle Ages. Intensive reading on special topics in mediæval legal and intellectual history. Some attempt will be made to acquaint the student with methods of research in the mediæval field. Prerequisite: History 110; History 320; four years of high-school Latin, or the special consent of the instructor. T Th S 10:00

HISTORY 430. Seminar in Diplomatic History. The investigation and discussion of selected topics in modern European diplomacy. Attention will be given to methods, materials, and the general literature of the subject. A reading knowledge of German and French is essential. Open to properly qualified students after consultation with instructor. W 2:00-5:00

HISTORY 440. Modern English History, including the development of the British Commonwealth of Nations. Open to students who have completed three courses in history. T Th S 11:00

HISTORY 510. American History since 1850. A seminar course for the intensive study of selected topics. Prerequisites: History 100, History 300, Economics 200, or their equivalents. Open to graduate students after consultation with instructor. Hours to be arranged.

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HISTORY 520. Topics in Legal History and Political Theory. The investigation and interpretation of selected legal, constitutional, and political problems in ancient and mediæval history. Much attention will be given to methods, materials, and the recent literature of the subject. Open to properly qualified students after consultation with instructor. (Not offered in 1928-29).

JURISPRUDENCE 300. A course planned to give the student a knowledge of the history of the development and of the philosophy of law, together with a knowledge of the essentials of selected divisions of modern law, including Criminal Law, Torts, Contracts, Agency, Partnership, Negotiable Instruments, and Private Corporations.

M W F 8:00

PHILOSOPHY 210. Logic and Ethics. First half-year: a study of the process of thinking, the laws of inductive and deductive reasoning, and the nature of truth. Second half-year: an examination of the development of moral ideas, the essentials of the main ethical theories and the problem of morality at the present time.

M W F 9:00

PHILOSOPHY 300. History of Philosophy. An historical survey of the essential features and main currents of philosophical thought, ancient, mediæval, and modern.

T Th S 9:00

PHILOSOPHY 310. Types of Ethical Theory. A critical examination of some of the principal works of moral

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philosophy, and a study of the problem of moral value. (Alternates with Philosophy 440.)

Hours to be arranged.

PHILOSOPHY 320. Contemporary Philosophy. A study of European and American philosophy since Schopenhauer, dealing with the attitudes of idealism, realism, and pragmatism as exemplified in questions concerning the nature of reality, the problem of knowledge, social and political attitudes, aesthetics, and theories of morality. (Alternates with Philosophy 430. Not offered in 1928-29.)

PHILOSOPHY 410. Philosophy of Religion. An introduction to the historical-philosophical study of religion, dealing with the main facts in the evolution of religion and the more fundamental problems of the religious consciousness. Prerequisite: One course in philosophy.

T Th S 11:00

PHILOSOPHY 430. The Nature of Mind. An intensive study of the reflective process, thoughts, consciousness, meaning, and mind, based upon the data of psychology, anthropology, and biology as well as upon the philosophies of mind presented by classical and contemporary thinkers. Prerequisite: One course in philosophy. (Alternates with Philosophy 320.)

M W F 10:00

PHILOSOPHY 440. Pessimism and the Problem of Evil. An historical study of the problem of evil in ancient and mediæval thought, followed by a critical examination of the more significant pessimistic strains in modern philosophy, theology, and literature. Particular attention is given to modern scepticism and theodicy, Milton, Pascal,

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Bayle, Leibniz, the optimism of the Enlightenment, Rousseau and the romanticists, Goethe, Byron, Lénau, Leopardi, Alfred de Vigny, Schopenhauer, Hartmann, Tolstoy, and more recent philosophical pessimism. Prerequisite: One course in philosophy. (Alternates with Philosophy 310. Not offered in 1928-29.)

PHILANTHROPY 300. Social Problems. An intensive treatment of the following topics: Child Welfare, Immigration, Recreation, Delinquency and Crime, Public Health, and Housing. This course aims to equip the student of social activities as well as the prospective social worker with a knowledge of important types of social maladjustment. Prerequisites: Economics 200, one course in college History, Sociology 200. M W F 10:00

PHILANTHROPY 400. A course designed to train the student for professional social work. It includes the history of public and private relief, the functions of the more important social agencies, and the technique of social diagnosis and treatment. Theoretical instruction in the case method will be accompanied by field work under the direction of experts connected with the social agencies of the city of Houston. This course is limited to advanced students who are expecting to undertake professional social work. M W F 9:00

PHYSICAL TRAINING

THE athletic Field House, completed in the Fall of 1920, with its ample locker and shower facilities, and with its gymnasium floor and modern athletic apparatus, not only meets the needs of the university athletic teams but also

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furnishes ample opportunity for systematic physical training on the part of all members of the institution. A charge of two dollars per academic year is made for the use of a locker.

One period of physical training each week is required of all men of the Freshman class, and voluntary classes are formed for the benefit of all other members of the Institute. The classes are organized in such divisions as to eliminate direct competition between the physically weaker and the physically stronger among the students. The classes take up regular gymnastic work including boxing, wrestling, athletic dancing, basket-ball, indoor and outdoor base-ball, track work and the like. Appropriate emblems are awarded to students showing various degrees of efficiency. Numerous intramural games and contests are arranged between classes and other organizations to utilize the competitive spirit in the development of athletic and gymnastic proficiency. The certificate of medical examination submitted by a student on admission determines in a large measure the character of work that the individual student is permitted to take. In certain cases special physical examinations by the Medical Adviser to the Committee on Outdoor Sports will be required, for which a fee will be charged. Lectures are given on personal hygiene and the principles of health.

COURSES IN ENGINEERING

COURSES are offered in chemical, civil, electrical, and mechanical engineering. A complete course in any one of these branches extends over five years. A student who has successfully completed the first four years of a

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course is awarded a bachelor's degree, and after successfully completing the remaining year of his course he is awarded an engineering degree. It is intended in the engineering courses to pay special attention to the theoretical side, because experience has shown that theoretical knowledge is difficult to obtain after leaving the university, and without it a rapid rise in the profession of engineering is almost impossible. It is recommended that students obtain employment in engineering work during the summer vacations, for it should be remembered that no amount of university work can take the place of practical experience in engineering establishments and in the field. The courses in engineering are not intended to take the place of learning by practical experience, but are designed to supply a knowledge of the fundamental principles and scientific methods on which the practice of engineering is based and without which it is difficult, if not impossible, to succeed in the practice of the profession. The work of the first year is alike for all branches, in order that students may defer choice of a particular engineering course as long as possible. It is necessary for chemical engineers to make this choice at the beginning of the second year, civil engineers at the beginning of the third year, and electrical and mechanical engineers at the beginning of the fourth year.

The work of the first two years consists chiefly of courses in pure and applied mathematics, physics, chemistry, and other subjects, an adequate knowledge of which is absolutely necessary before the more technical courses can be pursued with advantage. Technical work is begun in the third year with courses of a general character in

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mechanical engineering, civil engineering, and electrical engineering, all three of these branches to be taken by all engineering students, with a slight change in schedule for those in chemical engineering. In the third year instruction of students in mechanical and electrical engineering is begun in shopwork. The classes in shopwork are intended to give familiarity with workshop methods. The object of these classes is not primarily to train students to become skilled mechanics, but to provide such knowledge of shop methods as is desirable for those who may be expected as engineers to design machinery, to employ mechanics, and to superintend manufacturing processes.

Students who can afford the time are recommended to devote three or four years to preliminary work instead of two, taking the B.A. at the end of four years and an engineering degree at the end of six or seven years. Students proposing to do this are advised to take a course devoted largely to mathematics, physics, and chemistry, or an honours course in either mathematics, physics, or chemistry. The subjects taken during the years of preparatory work must include those of the first two years in the general engineering course, which may be substituted for options in the academic course. The honours course in physics is strongly recommended for those who wish to become either electrical or mechanical engineers. Typical schedules permitting such combination courses will be furnished by the Registrar on request.

The following are the schedules for the five-year course leading to a bachelor's degree in four years and an engineering degree in five years:

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First Year

- (1) Mathematics 100
- (2) Physics 100
- (3) English 100
- (4) Chemistry 100
- (5) Engineering 110

Second Year

- (1) Mathematics 200 or 210
- (2) Mathematics 220¹
- (3) Physics 200
- (4) French or Spanish²
- (5) Engineering 210³

Third Year

MECHANICAL ENGINEERING AND ELECTRICAL ENGINEERING

- (1) Mathematics 300
- (2) Mechanical Engineering 300
- (3) Electrical Engineering 300
- (4) Civil Engineering 300
- (5) Mechanical Engineering 310

CIVIL ENGINEERING

- (1) Mathematics 300
- (2) Mechanical Engineering 300
- (3) Electrical Engineering 300

¹ Chemical Engineers take Chemistry 220.

² Chemical Engineers take German 100, other Engineers may substitute Chemistry 200.

³ Chemical Engineers take Chemistry 230.

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- (4) Civil Engineering 300
- (5) Civil Engineering 310

CHEMICAL ENGINEERING

- (1) Chemistry 300. Organic Chemistry
- (2) Chemistry 310. Physical Chemistry
- (3) Mechanical Engineering 300
- (4) Electrical Engineering 300
- (5) Economics 310

Fourth Year

MECHANICAL ENGINEERING

- (1) Mechanical Engineering Laboratory (M.E. 400)
- (2) Machine Design (M.E. 410)
- (3) Heat Engines (M.E. 420)
- (4) Industrial Management (M.E. 430) or an approved Elective
- (5) Internal Combustion Engines and Fuels (M.E. 440)
- (6) Economics 310
- (7) Seminar (Engineering 400)

ELECTRICAL ENGINEERING

- (1) Alternating Currents (E.E. 400)
- (2) Electrical Engineering Laboratory (E.E. 410)
- (3) Approved Engineering Elective
- (4) Industrial Management (M.E. 430) or an approved elective
- (5) Economics 310
- (6) Seminar (Engineering 400)

CIVIL ENGINEERING

- (1) Municipal Engineering (C.E. 420)
- (2) Masonry Construction (C.E. 440)

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- (3) Graphic Statics and Structural Design (C.E. 450)
- (4) An approved Elective
- (5) Economics 310
- (6) Seminar (Engineering 400)

CHEMICAL ENGINEERING

- (1) Chemistry 410A. Colloid Chemistry
- (2) Chemistry 420A. Electrochemistry
- (3) Chemistry 430. Chemical Engineering
- (4) Chemistry 480
- (5) Civil Engineering 300
- (6) Elective

Fifth Year

MECHANICAL ENGINEERING

- (1) Advanced Machine Design (M.E. 500)
- (2) Mechanical Plants and Processes (M.E. 510)
- (3) Thesis (M.E. 530)
- (4) Seminar (Engineering 400)
- (5) Elective (M.E. 520, or an advanced C.E., E.E., or science course)

ELECTRICAL ENGINEERING

- (1) Advanced Alternating Currents (E.E. 500)
- (2) Thesis (E.E. 510)
- (3) Heat Engines (M.E. 420)
- (4) Seminar (Engineering 400)
- (5) Elective

CIVIL ENGINEERING

- (1) Structural Design (C.E. 500)
- (2) Hydraulic and Sanitary Engineering (C.E. 510)
- (3) Railway Engineering (C. E. 520)

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- (4) Elective (Must be approved)
- (5) Thesis (C.E. 530)

CHEMICAL ENGINEERING

- (1) Chemistry 500
- (2) Chemistry 530
- (3) Elective (An advanced course in chemistry, physics, or mathematics)
- (4) Engineering Elective
- (5) Chemistry 580 (Chemistry Seminar)
- (6) Engineering 400 (Engineering Seminar)

ENGINEERING 110. Mechanical Drawing and Descriptive Geometry. Mechanical Drawing: the use of drafting instruments; lettering; drawing figures in isometric, cabinet, and orthographic projection; intersections and developments. Descriptive Geometry: orthographic projections of points, lines, planes, warped surfaces, etc., in the four angles of projection.

Section 1

W and F 11:00 and 2:00-5:00

Section 2

T and Th 11:00 M and T 2:00-5:00

ENGINEERING 210. Kinematics of Machines, and Plane Surveying.

KINEMATICS. The study of relative motion of parts of machines, instant centers, velocities, gearing and wrapping connectors.

M W F 12:00 W Th 2:00-5:00 (First half-year)

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PLANE SURVEYING. The study of the uses and adjustments of surveying instruments and of office methods. Problems are given in field work to familiarize the student with chain, compass, level, and transit. Plotting and compilations from field notes. Prerequisites: Engineering 110 and Mathematics 100.

M W F 10:00 W Th 2:00-5:00 (Last half-year)

ENGINEERING 400. A weekly meeting conducted by the fourth year engineering students for the discussion of current topics from the technical periodicals, and of scientific and technical papers of general engineering interest. This course must be taken during the year in which the student receives the B.S. degree. Open to others who have the necessary engineering background.

F 2:00-5:00

MECHANICAL ENGINEERING 300. Elementary Heat Power. A general course of lectures, recitations from text, and laboratory covering the characteristics, fields of usefulness, operation, and tests of fuels, steam engines and turbines, boilers, pumps, condensers, and auxiliaries; properties of steam; valve gears; simple internal combustion engines and accessories. Numerous problems illustrate the theory discussed. Prerequisites: Physics and Chemistry 100, Mathematics 200 or 210. Laboratory fortnightly.

M W F 10:00 M or T 2:00-5:00

MECHANICAL ENGINEERING 310. Engineering Shop. Text-book and lectures dealing with metallurgy, general forge, foundry, welding, heat-treating, and machine-shop practice, and their effects on machine design, and manufacturing. Practice with a variety of bench and machine

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tools, carefully selected for their fitness in illustrating the principles studied, for affording actual contact with machine work, and for developing a certain degree of skill and resourcefulness in the student.

Recitations, all sections, T Th 9:00

Shop Section A: W Th 1:30-3:30 F 1:30-4:30

Shop Section B: T Th 10:00-12:00 S 9:00-12:00

MECHANICAL ENGINEERING 400. Senior Mechanical Laboratory. An advanced course in general steam, air, oil, water, and power-transmission machinery operation and testing. Recitations from text, reports, and laboratory. Prerequisite: Mechanical Engineering 300. Must be accompanied with or preceded by Mechanical Engineering 420. W Th 2:00-5:00

MECHANICAL ENGINEERING 410. Machine Design. Recitations from text and references, also calculations and drafting involved in the design of machine parts, considering both the theory and its modifications due to shop practice and financial limitations. Design of several complete machines, such as punch presses and hoisting machines. Prerequisites: Engineering 210, Mechanical Engineering 310, Civil Engineering 300. M W F 10:00-12:00

MECHANICAL ENGINEERING 420. Heat Engines. General thermodynamics; applications of thermodynamics to the design and operation of air compressors, steam engines and steam turbines; commercial forms of such machines, with special emphasis on steam turbines; elementary steam plant design; elementary refrigeration. Prerequi-

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site: Mechanical Engineering 300. Lectures, text, and problems. M W F 9:00

MECHANICAL ENGINEERING 430. Industrial Management. A study of the principles and practice in the management of manufacturing plants; location and layout of works; organization of administration, sales, cost and production departments; selection of machinery, materials, and labor; wage system; cost analysis; welfare work; a short survey of the law of sales and contracts. Two recitations a week. Senior elective. T Th 9:00

MECHANICAL ENGINEERING 440. Internal Combustion Engines and Fuels. A study of the theory, design, and operation of internal combustion engines and gas producers. About one-third of the year is spent on engine design problems. Must be accompanied with or preceded by Mechanical Engineering 420. T Th S 8:00

MECHANICAL ENGINEERING 490. Experimental Problems. If conditions are favorable, mechanical engineering students may elect at least nine hours a week in approved investigations under the direction of a member of the staff.

MECHANICAL ENGINEERING 500. Advanced Machine Design. The investigation of elaborate complete machines; original design of complete machines, especially automatic machinery; design of mill-building trusses, floors, and structural details.

MECHANICAL ENGINEERING 510. Mechanical Plants and Processes. A general course dealing with special plants and processes, such as oil production, transportation, and refining, textiles, metal products, material hand-

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ling, etc., not covered thoroughly in other courses. Details of design and operation of special power and heating plants. Prerequisite: Mechanical Engineering 420.

MECHANICAL ENGINEERING 520. Advanced Heat Engines. The design and operation of heating, ventilating, and refrigerating equipment and plants; design of standard types of steam turbines, engines, and boilers. Elective.

MECHANICAL ENGINEERING 530. Thesis. The investigation, under the Mechanical Engineering staff, of some undeveloped engineering problem, either through experiment, design, or compilation of available information. The time required will be at least that necessary for a standard advanced course. Two copies of the accepted report will be required for deposit in the Institute libraries.

ELECTRICAL ENGINEERING 300. The fundamental principles of dynamo machinery, both direct and alternating current. The course includes laboratory work, which as far as possible parallels the class-room work. Prerequisite: Physics 200 and Mathematics 200 or 210. Laboratory fortnightly.
M W F 9:00 M or T 2:00-5:00

ELECTRICAL ENGINEERING 400. Generation, transmission, and utilization of alternating current power; characteristics and operation of alternating current generators and motors and of transformers; synchronous converters; brief treatment of electrical design. Prerequisite: Electrical Engineering 300.
T Th S 10:00

ELECTRICAL ENGINEERING 410. Electrical Engineering Laboratory. A laboratory study of alternating current

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circuits, instruments and machines. Standard testing of direct and alternating current machinery. Prerequisite: Registration in Electrical Engineering 400.

T 12:00 W Th 2:00-5:00

ELECTRICAL ENGINEERING 420. Electrical Design. Design of machinery for direct and alternating current; calculation of characteristics. Open only to students who show capacity for design and who are registered in Electrical Engineering 400. Hours to be arranged.

ELECTRICAL ENGINEERING 430. Theoretical Electrical Engineering. A more complete mathematical treatment of alternating-current phenomena than is given in Electrical Engineering 400, covering such subjects as transmission lines, unbalanced polyphase systems, and transients. Open only to students registered in Electrical Engineering 400 who show capacity in mathematics and electrical theory. Hours to be arranged.

ELECTRICAL ENGINEERING 440. Electrical Communication. The principles of communication by telegraph and telephone over wires and by radio. Open only to students registered in both Electrical Engineering 400 and Electrical Engineering 410 who show aptitude for communication work. Hours to be arranged.

ELECTRICAL ENGINEERING 490. Electrical Engineering Problems. If conditions are favorable, students of electrical engineering may elect at least nine hours a week in approved investigations, usually experimental, under the direction of a member of the staff.

Hours to be arranged.

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ELECTRICAL ENGINEERING 500. Advanced Alternating-current Theory. A continuation of Electrical Engineering 430 and Electrical Engineering 410. Attention will be given to special branches such as high voltage, high frequency, illumination, telephony, radio communication, etc. Three lectures and one laboratory period per week.

Hours to be arranged.

ELECTRICAL ENGINEERING 510. Thesis. A thorough report on an engineering investigation selected and carried out by the individual student. It is expected that a great deal of time will be given to thesis work. The course is considered the equivalent of a three-hour course.

CIVIL ENGINEERING 300. Strength of Materials and Hydraulics. . Strength of Materials: a course given primarily for the study of the theory of beams, columns, and shafts. In the theory are considered stresses and deformations due to tensile, compressive and shearing forces; the distribution of shear, bending moments, deflections, combined stresses, and torsional stresses. Physical tests of steel, wrought iron, cast iron, cement, and concrete are made in the laboratory. Hydraulics: a course devoted to the principles of hydrostatic and hydro-dynamic pressures; the flow of water through orifices, pipes, nozzles, open channels, and over weirs. Prerequisites: Physics 100 and Mathematics 200. Laboratory fortnightly.

T Th S 8:00 M or T 2:00-5:00

CIVIL ENGINEERING 310. Topographic, Geodetic, and Railroad Surveying. In this course are given the theory and practice of base line and triangulation measurements,

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determination of meridian, traversing with transit and stadia and with a plane-table, and mapping. Simple, compound, reversed, vertical, and spiral easement railroad curves. Computation of earth work. Prerequisite: Engineering 210. T Th 12:00 W F 10:00-1:00

CIVIL ENGINEERING 420. Municipal Engineering. The course covers three subjects. Highways: Design, construction and maintenance of earth, sand-clay, macadam, bituminous macadam, asphaltic concrete, brick, wood-block, stone-block, and cement concrete roads. Legislation and methods of financing. Water Supply: A study of rainfall, evaporation, yield, water bearing strata, etc. Water analysis and stream pollution. Design, construction, operation, and maintenance of purification systems, storage facilities, and distribution systems. Sewerage: A study of storm flow, modern methods of sanitation, disease epidemics, etc. Water carriage systems, separate and combined. Design, construction, and maintenance of sewers and sewage disposal plants. Prerequisite: Civil Engineering 300. M W F 8:00 M 2:00-5:00

CIVIL ENGINEERING 440. Masonry Construction. A study of concrete and concrete aggregates. Theory and design of reinforced concrete slabs, beams, and columns. A study of foundations. Theory, investigation, and design of retaining walls, dams, and arches. Design of typical parts of buildings and beam and girder bridges. Prerequisite: Civil Engineering 300. T Th S 9:00 F 10:00-1:00

CIVIL ENGINEERING 450. Graphic Statics and Structural Design. Algebraic and Graphic Statics. Theory

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and design of simple roof trusses, bridge trusses, and plate girders. Detailed drawings and estimates of cost and weight. Prerequisite: Civil Engineering 300.

M W F 9:00 M W 10:00-1:00

CIVIL ENGINEERING 500. Structural Design. Design of steel office and mill buildings. Analysis of stresses in statically indeterminate structures such as swing, cantilever, arch, and suspension bridges. A study of secondary stresses. Two lectures and one design period a week. Prerequisite: Civil Engineering 450 or its equivalent.

CIVIL ENGINEERING 510. Hydraulic and Sanitary Engineering. Investigation and development of water power. Design of dams and irrigating systems. Hydraulic turbines and pumps. Preliminary design for a water supply and sewerage system for a small city. Study of general sanitary problems including: garbage disposal, public health, street cleaning, etc. Three lectures and one design period a week. Prerequisite: Civil Engineering 420 or its equivalent.

CIVIL ENGINEERING 520. Railway Engineering. A study of the principles of economic location and construction, railway maintenance, railway structures. Design of terminals and signalling systems. Railway organization and valuation. Three lectures and one design period a week. Prerequisite: Civil Engineering 310 or its equivalent.

CIVIL ENGINEERING 530. Thesis. This will consist of an original investigation along some approved line of civil engineering work, an original design, or a critical review

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of existing work. In every case a complete typewritten or printed report will be required, and this will become the property of the Institute and be deposited in the general or departmental library.

COURSES IN ARCHITECTURE

To students of architecture the Institute offers a full course extending over five years, leading to a bachelor's degree at the end of the fourth year and to an architectural degree at the end of the fifth year. It is the purpose of the course in architecture to lead students during their residence to a comprehensive understanding of the art of building; to acquaint them with the history of architecture from early civilization to the present age; and to develop within them an understanding and appreciation of those conceptions of beauty and utility which are fundamental to the cultivation of ability in the art of design.

In arranging the courses which follow it will be observed that there are included certain indispensable elements of a liberal education and also such engineering and technical subjects as are becoming more and more necessary to the general education of a practising architect. Of the more strictly architectural subjects, design is given by far the largest place. As a matter of fact, the courses in history and design and those in freehand drawing, in water color, in drawing from life, and in historic ornament have all a double object: to create in the student an appreciation of architectural refinement and dignity, and to increase constantly his ability to express conceptions of architectural form. Accordingly, the training of the student is not limited to training in draftsmanship

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alone, but all courses conspire to the cultivation of creative and constructive ability in expression and design. With a view to keeping the student in touch with the progress of his profession and with the daily routine and detail of its practice, it is strongly recommended that he spend a portion of each of his summer vacations in the office of some practising architect.

The following are the schedules for the five-year course leading to a bachelor's degree in four years and a degree in architecture in five years:

First Year

- (1) Mathematics 100
- (2) English 100
- (3) French or Spanish
- (4) Physics 100
- (5) Architecture 100: consisting of
 - (a) Elements of Architecture
 - (b) Freehand Drawing

Second Year

- (1) Pure Mathematics
- (2) English
- (3) French or Spanish¹
- (4) A Science
- (5) Architecture 200: consisting of
 - (a) Design
 - (b) Freehand
 - (c) History of Architecture

¹ Students in second year shall continue the language chosen in first year course.

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Third Year

- (1) English
- (2) Mathematics 220
- (3) Architecture 300—Design
- (4) Architecture 310: consisting of
 - (a) Freehand Drawing
 - (b) Water-Color
 - (c) History of Architecture

Fourth Year

- (1) English or History
- (2) Architecture 400—Design
- (3) Architecture 410: consisting of
 - (a) History of Architecture
 - (b) Freehand
- (4) Architecture 430: consisting of
 - (a) Construction
- (5) Architecture 440: consisting of
 - (a) Historic Ornament
 - (b) Water-Color

Fifth Year

- (1) Architecture 500: Thesis Design
- (2) Architecture 510: History of Painting and Sculpture
- (3) Architecture 520: Life Drawing and Water-Color
- (4) Architecture 530: consisting of
 - (a) Construction
 - (b) Special Lectures

ARCHITECTURE 100.

(a) Elements of Architecture. Elementary training in drawing of order plates, wash drawings, lettering, with

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a series of lectures on descriptive geometry, shades and shadows, and perspective. Six hours a week.

M Th 1:30-4:30

(b) Freehand Drawing. Elementary drawing in pencil and charcoal of single simple objects and block groups and casts. Four hours a week.

T S 11:00-1:00

ARCHITECTURE 200.

(a) Design. Rendered drawings embracing the design of simple elements of buildings, together with advanced work in the use of the orders and in composition. Six hours a week.

T Th 12:30-5:30

(b) Freehand. Drawing in charcoal from simple casts of classical ornament. Four hours a week.

T S 8:00-10:00

(c) History of Architecture. Two lectures a week on the history of ancient architecture, illustrated by lantern slides, and two hours a week of research and tracing of historic buildings. Four hours a week.

T Th 1:30-2:30

ARCHITECTURE 300.

Design. The design of small buildings. The problems average five weeks in duration with twenty-four hours for the sketch problems at the end of major problems. Nine hours a week.

M W F 1:30-4:30

ARCHITECTURE 310.

(a) Freehand Drawing. Drawing from casts of antique sculpture. Four hours a week.

M F 8:30-10:30

(b) Water Color. Elementary training in color drawing and simple groups of still life. Two hours a week.

W 8:00-10:00

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(c) History of Architecture. Two lectures a week in the history of mediæval architecture, illustrated by lantern slides, and two hours a week of research in the study of historic buildings. Four hours a week. T Th 2:30-4:30

ARCHITECTURE 400.

Design. The design of public buildings and groups of buildings. The problems average six weeks in duration, alternating with twelve-hour sketch problems. Twelve hours a week. T 1:30-5:30 M W Th F 3:30-5:30

ARCHITECTURE 410.

(a) History of Architecture. Two lectures a week on the History of Modern Architecture. M F 1:30-2:30

(b) Freehand. Drawing from casts of full figure and group, antique sculpture. Four hours a week.

M F 9:00-11:00

ARCHITECTURE 430.

Methods of Construction. Three lectures a week on materials and construction, with one plate a week.

M W F 2:30-3:30

ARCHITECTURE 440.

(a) Historic Ornament. The study of the history of ornament, with a series of design plates in ornament from historic periods of architecture. Six hours a week.

T Th S 8:00-10:00

(b) Water-Color. Water-color drawing and sketching in color, work advanced, subjects varied. Two hours a week.

W 9:00-11:00

ARCHITECTURE 500.

Thesis Design. The problem of a thesis may consist of a single building or group of buildings, and must in-

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clude large-scale studies as well as general drawings. The student may select his own problem, but his entire programme is subject to the approval of the instructors in design. Twenty-hours a week.

M W F 8:00-12:00 T Th 1:30-5:30

ARCHITECTURE 510.

History of Painting and Sculpture. Three lectures a week on history of painting and sculpture. A critical survey of historic schools of painting and sculpture. Open to Juniors and Seniors taking the academic course.

T Th S 11:00

ARCHITECTURE 520.

Life Drawing and Water-Color. Rendered architectural details and measured drawings in color. Four hours.

T Th 9:00-11:00

ARCHITECTURE 530.

(a) Construction. Two lectures a week on mechanics of construction, with one construction plate a week. Hours to be arranged.

(b) Special Lectures. Lectures on the professional practice of architecture, including the business relations of architect with client and contractor. One lecture a week.

Included in the work of design of the second, third, and fourth years with a special study of the theory of design.

UNIVERSITY EXTENSION LECTURES

To bring the people of the city and community into more intimate touch with the academic life of the university, and to carry the influence of that life directly to many homes

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not represented on the rolls of its undergraduate or post-graduate students, regular series of public lectures, in the form of university extension lectures, are offered without matriculation fee or other form of admission requirement. These performances are authoritative in character, but as non-technical and popular in treatment as their subjects will permit. From domains of literature, history, science, art, philosophy, and politics, subjects of current interest as well as those of assured and permanent value are chosen. The original plan for these university extension lectures consisted in giving each academic year two regular series of thirty-six lectures each on Mondays, Wednesdays, and Fridays, from the middle of November to the middle of February, the second series running similarly from the middle of February to the middle of May; all these lectures are delivered in the lecture halls and amphitheatres of the Institute, each afternoon lecture beginning promptly at 4:30 and closing not later than 5:30. The Rice Institute Pamphlet for January, 1918, contains a detailed record of the university extension lectures delivered at the Institute during the academic years 1913-14 to 1917-18, inclusive. These performances were partially interrupted during the war, but have been resumed under some modifications of the original plan as to time and place.

ENDOWED PUBLIC LECTURESHIPS

THREE endowed public lectureships have been founded at the Rice Institute. The first of these, established in 1918 by Mrs. Estelle B. Sharp, of Houston, has to do primarily with topics in the social sciences; the second, founded

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in 1919 by Herbert Godwin, Esq., of Houston, is to be devoted initially to subjects of public concern during the period of reconstruction; while the third, founded anonymously in 1922 by a citizen of Houston, is dedicated to the promotion of interest in music both in the university and in the community. The Sharp Lectureship was inaugurated in the autumn of 1918 by a course of lectures on "The Obligations and Privileges of Citizenship—a plea for the study of social science," by the late Sir Henry Jones, F.B.A., professor in the University of Glasgow. Subsequent lectures on the Sharp Foundation have been delivered by Professor Andrew Cunningham McLaughlin, of the University of Chicago and Dr. Terrot Reaveley Glover, of Cambridge University. The Godwin Lectureship was inaugurated in the spring of 1920 by lectures on "The Conservation of the Institutions of the Republic," and "World-wide Coöperation among the Nations," by the Hon. William Howard Taft, twenty-seventh President of the United States of America. Further lectures on the Godwin Foundation have been delivered by Sir Auckland Geddes, the British Ambassador to the United States, and by President A. Lawrence Lowell, of Harvard University. The Lectureship in Music was inaugurated in the spring of 1923 by a course of lectures on music in the life of the community and of the nation, delivered by Mr. John Powell, the American composer and pianist; the Lectureship in Music has also been held by Mlle. Nadia Boulanger, of Paris, by Sir Henry Hadow, Vice Chancellor of the University of Sheffield, and by M. Maurice Ravel of Paris.

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AMONG the publications of the Rice Institute are at present included the Announcements, the Descriptive Brochure, the Programmes of University Extension Lectures, and the Rice Institute Pamphlet. The first three of these have appeared at intervals and in several editions; the Pamphlet, now in its thirteenth volume, is published quarterly in January, April, July, and October, with a view to giving wider publicity in permanent form to inaugural and other lectures in letters, science, and art by resident and visiting lecturers and professors to the University. In this connection the reader may wish to turn to the paragraph of this Announcement concerning the formal opening of the Institute.

LIBRARY

QUARTERS for the Library of the Institute have been provided in the Administration Building. The Affairs of the Library are administered by a committee of the Faculty and Miss Alice C. Dean, M.A., as Acting Librarian. In providing the initial equipment of the Library the policy is being followed of supplying such books as are necessary to supplement the courses of instruction and to support the independent investigations of members of the Faculty and advanced students. In this manner a high degree of efficiency becomes possible at the very beginning of the Library's existence. Moreover, for work of general and more popular interest the shelves of the Houston Public Library are accessible to all members of the Institute.

Besides several hundred current literary and scientific

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journals, the Library of the Institute contains at present about fifteen thousand volumes in back files of serial publications; among these may be mentioned complete files of the following: Abstracts of Bacteriology, L'Academie des Sciences de Paris—Comptes Rendus, Acta Mathematica, American Academy of Political Science—Annals, American Anthropologist (New Series), American Economic Review, American Electro-Chemical Society—Transactions, American Chemical Society—Journal, American Historical Association—Annual Reports, American Historical Review, American Institute of Chemical Engineers—Transactions, American Institute of Electrical Engineers—Transactions, American Institute of Mining and Metallurgical Engineers—Transactions, American Journal of Education, American Journal of International Law, American Journal of Mathematics, American Journal of Philology, American Journal of Science, American Machinist, American Mathematical Society—Transactions and Bulletins, American Naturalist, American Political Science Review, American Review of Reviews, American Society for Testing Materials—Proceedings, American Society of Civil Engineers—Transactions, American Society of Mechanical Engineers—Transactions, Anglia, Annali di Matematica Pura ed Applicata, Annalen der Chemie, Annalen der Physik, Annales de Chimie et de Physique, Annals of Mathematics, L'Année Psychologique, Annual Register, Antologia, Architectural Record, Archiv für Entwicklungsmechanik der Organismen, Archiv für Geschichte der Philosophie, Archiv für Protistenkunde, Archiv für Zellforschung, Archives Néerlandaises des Sciences Exactes et Naturelles, Aristotelian Society—Proceedings, Arts and Decoration,

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Astrophysical Journal, Atlantic Monthly, Bangor Historical Magazine, Baptist Quarterly, Beiträge zur Geophysik, Biochemische Zeitschrift, Blackwood's Edinburgh Magazine, Bookman, Le Botaniste, British Association for the Advancement of Science—Reports, California University—Publications in Zoölogy, Camden Society Publications, Carnegie Institution of Washington—Publications, Centralblatt für Bakteriologie, Chemical Abstracts, Chemical News, Chemisches Zentralblatt, Church Quarterly Review, Circolo Matematico di Palermo—Rendiconti, Civiltà Cattolica, Classical Philology, La Critica, Current History Magazine, Deutschen Chemischen Gesellschaft—Berichte, L'École Normale Supérieure—Annales Scientifiques, Edinburgh Review, Educational Administration and Supervision, Educational Review, Electric Journal, Electrical World, Electrician, Engineering Index Annual, Engineering News-Record, L'Enseignement Mathématique, Englische Studien, Ergebnisse der Anatomie und Entwicklungsgeschichte, Experiment Station Record, Filosofia delle Scuole Italiane, Fortschritte der Mathematik, Forum, Gentleman's Magazine, Great Britain Royal Commission Historical Manuscripts, Green Bag, Harper's Monthly Magazine, Harvard Graduates' Magazine, Harvard Law Review, Harvard Studies and Notes in Philology and Literature, Harvard Theological Review, Harvard University—Contributions from the Jefferson Physical Laboratory, Hibbert Journal, Institution of Electrical Engineers—Journal, L'Intermédiaire des Mathématiciens, International Journal of Ethics, International Monthly Magazine of Literature, Science, and Art, International Studio, Jahrbuch der Radio-aktivität und Elektronik, Jahrbuch über die Fort-

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schritte der Mathematik, Journal de Mathematiques, Journal de Chimie Physique, Journal de Physique, Journal of American Folklore, Journal of Animal Behavior, Journal of Economic Entomology, Journal of Experimental Medicine, Journal of Industrial and Engineering Chemistry, Journal of Immunology, Journal of Hellenic Studies, Journal of Parasitology, Journal of Philology, Journal of Philosophy, Psychology, and Scientific Methods, Journal of Physical Chemistry, Journal of Speculative Philosophy, Journal of the Society of Chemical Engineers, Koninklijke Akademie (Amsterdam)—Proceedings, Larousse Mensuel, Das Literarische Echo, Literary and Theological Review, London Mathematical Society—Proceedings, La Lumière Électrique (and L'Eclairage Électrique), Mathematische Annalen, Mathematische Zeitschrift, Metallurgical and Chemical Engineering, Millard's Review, Mind, Mississippi Valley Historical Association—Proceedings and Reviews, Modern Language Review, Modern Philology, Monist, Monthly Anthology and Boston Review, Municipal Affairs, Nation, National Electric Light Association Bulletin (New Series), National Municipal Review, National Society for the Study of Education—Yearbooks, Nature, New Republic, New York Times Index, Niles' Weekly Register, Nineteenth Century, Notes and Queries, Novitates Zoologicae, Nuovo Cimento, Ohio Archæological and Historical Publications, Outing, Palaestra, Pedagogical Seminary, Percy Society Publications, Philosophical Magazine and Journal of Science, Philosophical Review, Philosophie Positive, Philosophische Monatshefte, Physical Review, Physiological Abstracts, Physikalische Zeitschrift, Political Science Quarterly, Power, Print Collectors'

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Quarterly, Punch, Quarterly Journal of Microscopical Science, Quarterly Review, Reale Accademia dei Lincei—Rendiconti, R. Accademia delle Scienze Fisiche e Matematiche, Naples—Atti., R. Accademia di Scienze Morali e Politiche (Naples)—Atti., Review of Applied Entomology, Series B, Revue de Paris, Revue de Philosophie, Revue de Synthèse Historique, Revue des Deux Mondes, Revue General de l'Electricité, Revue Historique, Revue Occidentale Philosophique Sociale et Politique, Revue Philosophique de la France et de l'Étranger, Revue Politique et Parlementaire, Revue Semestrielles des Publications Mathématiques, Romanic Review, Royal Historical Society—Transactions, Royal Society of London—Philosophical Transactions and Proceedings, School and Society, Science Abstracts, Scientific Monthly, Scottish Text Society—Publications, Select Journal of Foreign Periodical Literature, Société Mathématique de France—Bulletin, Société Chimique de France—Bulletin, Société de Pathologie Exotique et de sa Filiale de l'Ouest—Africain-Bulletin, Social Hygiene, Society for the Promotion of Engineering Education—Proceedings, Society of Chemical Industry—Journal, Southwestern Historical Quarterly, Studien zur Englischen Philologie, Studien zur vergleichenden Literaturgeschichte, Studio. Texas Supreme Court Reports, The Times Weekly (London), United States Supreme Court Reports, Unpopular Review, Vierteljahresschrift für Wissenschaftliche Philosophie und Soziologie, Washington Academy of Sciences—Journal, World's Work, Yale Review (New Series), Yellow Book, Zeitschrift für Analytische Chemie, Zeitschrift für Angewandte Chemie, Zeitschrift für Anorganische Chemie, Zeitschrift für

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Elektrochemie, Zeitschrift für Exacte Philosophie, Zeitschrift für Mathematik und Physik (complete from 1882 to date), Zeitschrift für Physikalische Chemie, Zeit für Wissenschaftliche Photographie . . ., Zoological Society of London—Proceedings, Zoologischer Anzeiger Zoologische Jahresberichte.

LABORATORY INSTALLATION

THE physics laboratories are located on the north side of the academic court, adjoining the administration building, and are connected with the latter by a continuation of the original cloister. The buildings are constructed of brick and marble, corresponding in design to the style as defined in the administration building, but of a simpler character expressing their purpose as laboratories. The physics laboratory proper is a two-story building 275×56 feet, connected with a large lecture amphitheater 121×72 feet. The main building contains four large students' laboratories, two lecture rooms equipped for giving illustrated lectures, one class room, and two research rooms, two dark rooms, a library, and administrative offices. The principal room of the amphitheater wing is a large lecture hall with seating capacity for about four hundred auditors. The room is fully equipped for giving illustrated lectures and is arranged with seats properly elevated to command a 28-foot lecture table which is supplied with gas, hot and cold water, compressed air, vacuum, and direct and alternating electric currents. In this wing also are six rooms fitted for research work in physics, a battery room in which a battery of 60 Edison storage cells of 300 ampere-hours' capacity has been installed with space provided for another equal

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battery, a switchboard room where the wires from the battery can be connected in any desired manner for use in the laboratories, motor generators for charging the batteries and supplying direct current to the lecture rooms and laboratories, a vacuum pump, liquid air plant, constant temperature rooms, a preparation room, a large dark room, and a fully equipped workshop. The floor of the workshop is supported free from contact with the surrounding walls so that vibration from the machines does not affect the building. Elevators for moving heavy apparatus are provided, and all laboratories, lecture rooms, and research rooms are equipped with individual service, for the students, of gas, water, steam, compressed air, vacuum, and both direct and alternating currents of electricity. The laboratory now contains a fine collection of modern apparatus suitable for teaching and research work in all branches of physics. This collection includes about seventy ammeters and voltmeters of all types, including a Kelvin gauge reading up to 30,000 volts and standard Weston instruments. About fifty resistance boxes of all kinds are also provided, and numerous galvanometers, electrometers, and electroscopes of various types. High potential batteries and generators are available for research work. A large Weiss electromagnet, a large Pye magnet, a Leeds and Northrup potentiometer, and complete equipment for the accurate measurement of the conductivity of solutions, a precision electric wave meter and precision air condenser, may be specially mentioned among the other electrical instruments. The optical instruments include a Hilger's wave length spectrometer, monochromatic illuminator, spectrophotometer, and quartz spectrograph; also a set of

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interferometers of various types. Several modern X-ray generators are available for research work. For work in heat, electrical furnaces, various types of radiation pyrometers, resistance thermometers, and standard thermocouples are available. An Eotvos torsion balance machine of the most improved pattern for geophysical work has lately been installed. This machine, valued at \$10,000, is the gift of Mr. Robert McM. Gillespie of New York City. The apparatus for general work includes several Gaede and diffusion pumps; also standards of weight, length, etc. The collection of apparatus for illustrating lectures is exceptionally complete. An instrument maker and a glass blower are employed in the construction of special apparatus for research work.

The laboratories for chemistry are housed in a three-story building of maximum rectangular dimensions of 307 and 181 feet, with ample attic and basement accommodations, built around several open courts, facing the South. Of brick and stone, steel and concrete construction, the building embodies the prevailing architectural beauty and simplicity of technical plan exhibited in the earlier science laboratories of Rice. Provision is made for adequately equipped, separate laboratories both for research and instruction in the half dozen major branches of chemistry, with an even larger number of smaller laboratories for corresponding work in the more highly specialized subjects of the science. In all the laboratories there will be an abundance of natural light, while an elaborate system of artificial ventilation promises to remove all fumes through a central draft tower, so designed as to constitute of itself one of the architectural features of

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the building. Careful consideration has been given both to the anticipated growth of the institution and the normal development of the department. The plans thus studiously prepared may bear comparison with those of extensive establishments erected recently at other universities and scientific centres of the country. The department is well equipped with modern apparatus and materials for research and for lecture room and laboratory work in inorganic, organic, analytical, physical, colloid, electro-, bio-, and industrial chemistry. Some of the more special apparatus includes a Hilger X-ray spectrograph, Zeiss auto collimating spectrograph, Zeiss and Bausch and Lomb ultramicroscope outfits, Zeiss interferometer refractometer, Leitz micro and macro motion photographic outfit, complete facilities for developing and projecting motion pictures, Reichert metallographic microscope, quadrant electrometer, Leeds and Northrup type K potentiometer, Sharples super-centrifuge, porcelain basket type centrifuge, a specially designed thermostat for precise solubility determinations over wide temperature ranges, Pregl micro-combustion outfit, basal metabolism apparatus, experimental double effect Swenson evaporater with vertical and horizontal effects, Buflovak standard vacuum shelf drier, Sperry plate and frame and Kelly filter presses, complete Sturtevant equipment for crushing and grinding including jaw, roll, and disc type crushers, etc. Each laboratory room is equipped with the necessary conveniences, such as water, gas, alternating and direct current, air blast, hoods, suction pumps, etc. The lecture rooms are suitably arranged for the illustration of lectures by experiment and lantern projection. In the department library will be

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found the more important journals, works of reference, and standard text-books on the different branches of chemistry. These books and periodicals are accessible to all students.

The department of biology is for the present situated in the west end of the main wing of the physics laboratories. It has laboratories capable of seating one hundred and fifty students; lecture rooms with lantern for microscopic and other forms of projection; research rooms, preparators' room, store rooms, etc. The undergraduate courses are cultural in their aim. Laboratory work is given in all; microscopes of the most modern type are provided for the students. The department is equipped with an extensive series of specimens, casts, and charts for the study of zoölogy. Binocular microscopes, microtomes of various kinds, thermostats, embedding baths, and considerable accessory equipment, including physiological apparatus, are available for research work. Most of the important current zoölogical periodicals are to be found in the library.

The department of architecture is located on the second floor of the chemistry laboratory, and is equipped with large general drafting rooms modern in all their appointments, and a large studio for freehand drawing and water-color. A working library of architecture adjoins the drafting room and is equipped with the standard architectural publications; current files of architectural periodicals; plates, photographs, and lantern slides. The freehand studio is well equipped with plaster casts from the antique, and of historic ornament. The department also possesses models for elementary instruction in the orders, and models for the teaching of construction.

The drafting rooms for instruction in engineering drawing

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are located in the mechanical laboratory building. These rooms are equipped with drawing tables, lockers, and racks in such number that all students may work independently. Special equipment includes blue printing machines, universal drafting machines, parallel attachments, folding and rolling parallel rules, ellipsographs, beam compasses, section liners, and an elaborate set of Olivier models including the war mast, hyperbolic paraboloid, elliptical, and conchoidal hyperboloid, conoid, groined, and cloistered arch, intersecting cylinders, raccording warped surface, and corne de vache.

The civil engineering laboratory is fully equipped with the usual surveying instruments, transits, levels, compasses, traverse tables and plane-tables, all of standard American makes. These include C. L. Berger and Sons, Buff and Buff, W. and L. E. Gurley, Bausch and Lomb, Keuffel and Esser, Eugene Dietzgen and Company, William Ainsworth and Sons, The A. Lietz Company. There is also a large assortment of the necessary auxiliary equipment such as tapes, rods, range poles, etc. The drafting room is fully equipped with instruments not required by each individual student, such as planimeters, protractors, special slide-rules, military sketching boards, railroad curves and irregular curves consisting of splines and weights, calculating machines. The Materials Testing laboratory of this department is equipped with one 50,000 pound Riehle universal machine; one 100,000 pound Olsen Universal machine; one 200,000 pound Olsen Universal machine; and one 60,000 inch-pound Riehle torsion machine; also an Olsen-Boyd 1000 pound automatic briquette testing machine; a Tyler Ro-tap testing sieve shaker, and the

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necessary auxiliary apparatus for making the usual tests. All of these machines except the cement testing machine are operated by directly connected individual motors so as to avoid all shafting and belting. The Hydraulics laboratory is equipped with a Worthington 200 gallon per minute, 100 ft. head volute centrifugal pump with a direct connected slip ring motor; a Simplex Venturi Meter; trapezoidal, triangular, and rectangular wiers; a Pelton Doble impulse turbine; a Gould ram; storage reservoir; overhead calibrated tank; and necessary gauges and other usual equipment. It is planned to add from time to time such additional equipment as is necessary for tests by advanced students and for research.

The equipment of the electrical engineering laboratory is ample for a thorough study of direct and alternating current circuits and machines. All the common types are represented and some of the less usual. In some of the types, older machines may be compared with the more modern and the trend of development noted. There are examples of the practice of each of the leading manufacturers, including Crocker-Wheeler, Holtzer-Cabot, Roth, Sprague, Western Electric, General Electric, Westinghouse, Wagner, Robbins and Myers, Commercial, Electric Manufacturing Company, Fairbanks-Morse, Kuhlman Electric, Pittsburgh Transformer, Roller-Smith, Condit, Cutter, Cutler-Hammer, Ward-Leonard, Jewell, Biddle, Leeds-Northrup, and Weston. Among the direct current machines are generators rated: 50 kilowatts 250 volts; 35 kilowatts 250/125 volts (three wire); two alike, 5 kilowatts 125 volts, for parallel operation either flat- or over-compound; 5 kilowatts 110 volts; 4½ kilowatts 125 volts flat-

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compound; $3\frac{1}{2}$ kilowatts 125 volts flat-compound; 1 kilowatt 500 volts; 4 kilowatts 125 volts (500 amperes) with Tirrill regulator; $1\frac{1}{2}$ kilowatts 2000/1200/800 volts; a set of three direct-connected machines for 90/150 and 20/25 volts direct current and 90/110 volts three-phase 170/250 cycle alternating current; and motors rated: 25 horse power 250 volts (compound); 5 horse power 500 volts (old type); two alike, 13 horse power 230 volts; 10 horse power, $7\frac{1}{2}$ horse power, 2 horse power, all shunt wound for 230 volts; 3 horse power 230 volts, variable speed; 4 horse power 220 volts, series. The alternating-current equipment includes: two phase-displacement sets, one consisting of two identical $7\frac{1}{2}$ kilovolt-ampere, 220 volt, 1-2-3-6 phase synchronous generators, with shifting stators, which may be direct connected or operated without mechanical connection, the other similar, except that the generators are 15 kilovolt-ampere and one is mounted for use as a cradle dynamometer; a 5 kilovolt-ampere 220 volt 3-phase synchronous generator with distributed field (round rotor); a 4 kilovolt-ampere 3-phase 110 volt 200 cycle generator; a $7\frac{1}{2}$ horse power 3-phase squirrel cage induction motor; a 5 horse power 3-phase slip ring induction motor with controller; another of the same rating with starter; a 10 horse power induction motor with internal starting resistance; a $7\frac{1}{2}$ horse power Fynn-Weichsel 3-phase motor; a $7\frac{1}{2}$ horse power unity power factor single-phase motor; a 50 horse power induction motor with internal starting resistance; a 50 kilovolt-ampere synchronous motor; three 2 kilovolt-ampere and six 3 kilovolt-ampere 110/220: 110/220 volt transformers; two 3 kilovolt-ampere 460/230: 230/115 volt 3-phase trans-

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formers of the shell type; six 5 kilovolt-ampere 110/220 volt transformers with taps for Scott and other connections. Of particular interest are: a 25 horse power 250 volt cradle dynamometer; a dynamotor operated from a 110 volt direct-current supply and delivering 18 amperes at 110 volts 500 cycles; two synchronous converters or double current generators, one compound wound and with commutating fields, rated 10 kilowatts 250 volts direct current 1-3-4-6 phase, the other of the split or regulating pole type, rated 8 kilowatts 110 volts 1-3-4 phase; a set consisting of two direct connected induction motors, one 10 horse power 1200 rev. per min., slip ring type, the other 5/10 horse power 600/1200 rev. per min., squirrel cage type, for cascade operation at several speeds; three 220 volt 3-phase induction regulators for raising or lowering voltage 100 per cent, of 15, 13 and 10 kilovolt-ampere capacity respectively; a 1 kilovolt-ampere 20 volt phase advancer; a 3 kilovolt-ampere 30,000 volt oil testing transformer; an oscillograph equipped for taking either rectangular or circular records. Miscellaneous apparatus includes: condensers for power-factor correction; reactances, both air and iron core; rheostats; and starting devices. Meters are available for making any reading likely to be needed and include voltmeters (a-c. and d-c.), ammeters (a-c. and d-c.), wattmeters (single-phase and polyphase), current and voltage transformers, power-factor meters, frequency meters, watt-hour meters, tachometers, and a synchronoscope. For checking and calibrating these instruments there is an assortment of precision instruments, including a potentiometer and laboratory standards.

The mechanical engineering laboratory equipment falls

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into six general classes: steam, internal combustion, hydraulic, air, refrigeration, fuel and lubricants testing machinery. The first class contains an 8×18 Murray-Corliss engine equipped with rope brake; a 7×7 vertical Wachs slide-valve engine with Stephenson reversing gear, and a 7×10 horizontal slide-valve engine, both with Prony brakes; a $6 \times 4 \times 6$ duplex boiler feed pump; a 20 kilowatt direct current De Laval turbo-generator set, nozzled for condensing and non-condensing operation and fitted with a brake-pulley which may be substituted for the generator; a 16 horse-power Lee impulse turbine driving a centrifugal pump; a steam turbine nozzle arranged for experimental work; a similar equipment for calibration of steam orifices; a Westinghouse locomotive type air-compressor arranged for economy test; a demonstration set-up of standard air-brake equipment; an air-lift pump model; a 205 cubic foot Ingersoll-Rand 2 stage steam driven air compressor; and a $6 \times 10 \times 6$ vertical compound Sturtevant engine. The machines are piped to exhaust either into the power-house stack or into three Wheeler surface condensers served by circulating and wet vacuum pumps.

Internal combustion engines are represented by a 20 horse-power fuel oil engine (Chicago Pneumatic Tool Co.); a 15 horse-power Foos oil engine equipped with two types of governors giving opportunity for engine tests using either gas, kerosene, or gasoline as fuel; a 3 horse-power Mietz and Weiss two-stroke cycle unit; a 3 horse-power Novo gasoline engine; Hall-Scott, Lawrance, Union, and Wright aeronautical engines; Chrysler, Maxwell, Chevrolet, and Willys-Knight automobile engines; and a Ford auto-

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mobile engine with water-brake load. High-speed automobile and aeroplane engines are tested with a 100 horse-power Sprague cradle dynamo-meter equipped with slotted bed-plate, gasoline metering device, and adjustable engine supports. A Hopkinson optical indicator with photographic attachment is also provided. The refrigerating equipment includes a motor-driven 3-ton York compression machine with double-tube condenser, shell brine-cooler, brine-heater, and brine-pump. The hydraulic machinery consists of a 3-inch centrifugal pump and a 4×6 triplex pump, both driven by variable speed D. C. motor; an Evinrude centrifugal pump direct-connected to a gasoline engine; a steam turbine 200 g.p.m. centrifugal boiler-feed pump; a calibrated overhead tank; a concrete storage cistern; four Venturi meters; a single tube manometer; a steam pulsometer; a hydraulic ram; two weir boxes and notches; a Pelton-Doble water wheel with plate glass sides; orifices, water meters, weighing tanks and scales, gauges, and the usual small accessories. In a separate fuel laboratory room is the equipment for testing fuels and oils. It includes complete Atwater and Parr coal-calorimeter outfits; analytical balances; two types of Orsat flue-gas apparatus; Scott and Saybolt viscosimeters; a Thurston coefficient of friction machine; Bureau of Mines flash-point tester; hydrometers and specific gravity apparatus; a Junker type gas calorimeter; platinum ware, drying oven, ball mill, etc. Boiler tests are made on a 20 horse-power vertical fire tube boiler equipped with the necessary pumps and weighing equipment. Tests of heat-treated steel may be made with the aid of the several electric and gas furnaces, pyrometers of electric, expansion, optical,

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and gas pressure types, scleroscope, Rockwell, and Brinell ball machines. A metallurgical microscope with specimen grinders, camera, and the usual accessories is also available.

In addition, the laboratories contain a Sirocco blower driven by calibrated motor, a plate blower, Pitot tubes, orifices, air Venturi meter, large and small gas meters, anemometer, injectors, dead weight pressure gauge tester, thermometer calibration apparatus, hoists, tachometers, steam calorimeters, the most popular gas and steam engine indicators, planimeters, standard gauges and thermometers. For class-room demonstrations, a Cussons valve-setting model, an automobile engine, several dozen sectioned models of intricate machines, and a collection of lantern slides, blue-prints, and curves are available.

A standard moving-picture machine permits the exhibition of the many films now loaned by manufacturers of engineering equipment.

The machine shop contains machine tools of quite varied character, each selected for its peculiar fitness to illustrate the principles and common details of modern shop tools and methods. The lathe equipment consists of twelve machines: one 14×8 Le Blond cone-head lathe with taper attachment and double back gears; one 14×6 Hendey cone-head quick-change lathe; one 14×8 standard lathe; one 14×7 Prentice geared head quick-change lathe; one Prentice motor-driven 15×6 lathe; one Flather motor-driven 14×5 lathe; one 14×6 geared head quick-change Lodge and Shipley lathe; one 14×6 motor-driven Lodge and Shipley selective head lathe; a Rivett bench lathe; a Monarch 14×5 motor-driven quick-change lathe; and two individual drive 14×6 American high duty geared head

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engine lathes, one of these with turret attachment. The planer type of machine is represented by a 16-inch back-geared Rockford shaper with compound head, and a 22×22×8 foot Gray planer. All kinds of plane surfaces can also be cut upon two Kempsmith and two Cincinnati universal milling machines, which are fitted with dividing heads for gear cutting, differential indexing, spiral grooving, etc., as well as a good variety of cutters. One Kempsmith machine is supplied with a universal milling attachment. A No. 12 Brown and Sharp motor-driven universal grinder, and a Greenfield cutter grinder serve as practical examples of high-class precision machine tools. A graphical watt-meter permits tests of tool shapes and machinery conditions. A tilting brass-furnace, moulders' benches, wood lathes, band saw, jointer, sander, and the necessary small tools provide for simple pattern and foundry work. The metallurgical furnaces and equipment listed with the mechanical laboratory apparatus is also available for shop use. For miscellaneous work, a double-disc motor-driven disc grinder, a power oil-stone, work benches and vises, two hand-tool grinders, a power hack-saw, down-draft forges, a 20-inch drillpress, a sensitive drill, an arbor press, an air hammer, air and electric drills, portable electric grinders, an acetylene generator, eight complete oxy-acetylene welding outfits, and two electric arc welders (G. E. and Lincoln) are available. A sufficient supply of small hand and machine tools, lathe sets, reference standards and precision measuring instruments is issued on checks from a separate tool-room. About half the machine tools have individual motor drive. The others are grouped about a line-shaft and a 15 horse-power motor.

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STUDENT ORGANIZATIONS

IN the residential halls for men, students and instructors are already living in a common society, a common life under conditions the most democratic. They sit at a common table; they lounge in common club-rooms; they frequent the same cloisters; in games they meet again upon the same playing fields. The halls are governed by a student Hall Committee, under the general supervision of the Dean.

From the very opening days of the new institution the students of the Rice Institute, irrevocably committed to canons of clean sport, have participated in the several forms of intercollegiate athletic contests. The first society of students to be organized at the new University was the Young Men's Christian Association. This step on the part of the young men was speedily followed by a similar step on the part of the young women in the organization of their branch of the college Young Women's Christian Association. The founding of these religious societies, both of which have contributed to the social life and the religious spirit of the new University, has been followed in the course of the early years by the forming of several literary societies: three by the young women, the oldest society bearing the name of Elizabeth Baldwin, wife of the founder of the Institute, a later organization known as the "Pallas Athene Literary Society," and the youngest, named the "Owen Wister Literary Society," and three by the young men, known respectively as "The Owl Literary Society" and the "Riceonian Literary and Debating Society," and a later organization, "The Congressional Club," organized after the order of the House of Repre-

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sentatives and considering in debate the leading public issues as they arise before Congress. Under the auspices of the first societies mentioned was formed the first of the undergraduate periodical publications, namely, "The Thresher," which appeared fortnightly from its initial number in January, 1916, to June, 1918, since which time it has been published weekly. Previous to the organization of the staff of "The Thresher," the Class of 1916 made arrangements for the publication of the first class annual of the Institute, "The Campanile," which appeared in the spring of 1916. The second and third volumes were issued by the classes of 1917 and 1918 respectively, and subsequent annual editions have been published by the representatives of the student body as a whole. In addition to the student organizations mentioned above, various departmental clubs and scientific societies have been contributing to the intellectual life of the Institute, one of the earliest of these being the Engineering Society, which was started in 1914, and which in recent years has been conducting as a student enterprise the biennial Rice Engineering Show, a two-day public exhibition of the activities of the engineering and science laboratories. The student body is organized into a Student Association which includes all students of the Institute and serves as the official organ for the expression of their views and for the promotion of student enterprises. In particular the undergraduate periodicals are now maintained under the auspices of this association. A Students' Council, elected by the Association, provides leadership in the Association. The President of the Students' Council is also President of the Association.

The extra-curriculum academic and athletic activities

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of the Rice students have been stimulated by several prizes donated by friends of the Institute; namely, the Lechenger silver cup, the gift of Mr. L. Lechenger, for the winning debating team in the annual commencement contest of the literary societies; the Shotwell and Harris gold medal, the gift of Messrs. W. I. Shotwell and I. Harris, for the winner of the annual oratorical contest of the literary societies; the Wilson silver cup, the gift of Mrs. H. A. Wilson, for the winning team of the annual class debate of the young women's literary society; the Kalb basketball memorial silver cup, the gift of Mr. E. F. Kalb; and the Sweeney silver cup, the gift of the J. J. Sweeney Company, to be contested for annually in class track athletics. Mr. William M. Rice, Jr., has provided a cabinet for the preservation and exhibition of these and similar gifts and trophies of Rice local and intercollegiate contests. This elaborate cabinet, designed by Mr. R. A. Cram, supervising architect of the Institute, is a most beautiful example of wood carving.

Through the generosity of Mrs. James L. Autry and as a memorial to her husband, the late James L. Autry, of Houston, the Diocese of Texas of the Protestant Episcopal Church is maintaining in the immediate vicinity of the Rice Institute, Autry House, as a social and religious centre. The corner stone of Autry House was laid during the commencement ceremonies of the Class of 1921. To this community group Mrs. E. L. Neville of Houston, in memory of her brother, the late Edward Albert Palmer, has contributed the beautiful Edward Albert Palmer Memorial Chapel, which was dedicated November 27, 1927. All the opportunities of these establishments are

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available to the students of the Rice Institute irrespective of religious affiliation. Other religious bodies have intimated that they are considering future provision for similar undertakings in the neighborhood of the Rice Institute.

Through personal association with several generations of Rice students, Mr. George Cohen of Houston was led to make generous provision for the Robert and Agnes Cohen House in honor of his parents, who for many years have been well known and highly respected citizens of Texas. This beautiful building, in materials and architecture conforming with the first of the Rice quadrangles, designed to afford to the faculty the advantages of a clubhouse on the campus, was dedicated at the annual homecoming of the Rice Alumni on Thanksgiving Day of the year 1927.

TWELFTH
ANNUAL COMMENCEMENT

TWELFTH ANNUAL COMMENCEMENT

DEGREES IN COURSES CONFERRED

JUNE 6, 1927

At the twelfth annual commencement convocation of the Rice Institute held at the conclusion of the fourteenth academic session the baccalaureate sermon was preached by the Right Reverend Davis Sessums, M.A., D.D., Bishop of the Protestant Episcopal Church of Louisiana, New Orleans, Louisiana, and the commencement address of His Excellency, Baron de Cartier de Marchienne, LL.D., Belgian Ambassador to the United States, was read by the Honorable Robert Silvercruys, Counsellor of the Embassy, Washington, D. C. On the recommendation of the Faculty and by the authority of the Trustees, the President of the Rice Institute, at the final ceremonies in the Academic Court on the morning of June 6, 1927, conferred the following degrees respectively:

BACHELOR OF ARTS

Lovett Anderson Abercrombie	Whitfield Arrington
Elenora Cecilia Alexander	Darrow Sublett Babcock
Victor Barringer Andrew, Jr.	Alberta Mae Baines
Eleanor Miller Archer	Henry Eugene Banta— With Honours in Physics
	Friedarica Ellen Barbour

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Bernice Barker	Lacoste George Ellis
Madge Deering Barrick	Mary Louise Embry
Maurine Marie Bates	Dorothy Estill
Benjamin Frederick Bellows	Mary Louise Fitch
James Bobbitt	Susie Ella Fondren
Courtney Adine Booth	Etheldra DeLoach Fraley
James House Branard, Jr.	Laurance Hiles Frazee
Benjamin Eddins Brewer	Mildred King Fulton—With
John Chambers Bridgwater,	Distinction
Jr.	Edith Gard
William Brison	Dora Elizabeth Goeppinger
Mary Louise Britton	Rachel Goldofsky
Lloyd Joseph Broussard	Elizabeth Dana Gomperts
Forrest Edward Byrnes	Hazel Goodwin
Natalie Alston Carlisle	Frank Edmond Gordon
James Alston Clapp, Jr.	Hazel Catherine Green
Hollis Windman Clark	James Greenwood, Jr.
Myrtle Inez Cocke	Catherine Caroline Harbeck
Sallie Mildred Cook	Clara Malinda Harbeck
Bernice Copeland	Edward Theodore Hertz-
John William Cox	berg (In Absentia)
Zelda Onesia Cox	Bernice Ellen Hillyer
Wilbert Oscar Crain	Paul Louis Hochuli
Irene Brewster Davidson	Henry Schwarz Hoffman
James Lawrence Davis	Emily Hutson—With Hon-
Winnie Eileen Davis	ours in English
Thomas Kenney Dixon, Jr.	Susie Jackson—With Dis-
James Walker Dodson—	tinction
With Distinction	Theodore Louis Jahn—With
Pearl Hooker Dryden	Distinction
William Gordon Duhig	Joe Sherrill Jarrett

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Mabel Florence Johnson	Richard Reynolds Morris
Celeste Bedell Jones	Kristine Carmen Mortensen—With Distinction
Isaac Kaplan	Martha Davis Morton
Gertrude Elizabeth Kelly	Lloyd Hugh Murdock
Mildred May Kelly—With Honours in Mathematics	Elbert Jefferson Myers
Margaret Leslie Kimbell	Thomas John O'Brien
Virginia Louise Kinard	Henry Oliver—With Distinction
Arthur George King	Mattie Lou Perry
Kathryn Myrtle King	Ruth Polk
John Alvin Kirschke	Rosa Helen Pomerantz—With Distinction
Anna Helen Koch	Florence May Powars
Leroy Eliphalet Lane	Mary Augusta Powars
Eugene Patterson Lillard—With Distinction	Hortense Selene Pye—With Distinction
William Edward Little	Harry Page Redwine
Elizabeth Lurie	Eugenia May Rhodes—With Distinction
Ella Lois McGilvray	Andrew Sug Robertson
Milton Bowles McGinty	Albert Christian Sauer
Edith Evelyn McKean—With Distinction	Leola Arabella Scharnberg
Jesse Albert Madden	Carolyn Seeger
John Temple Maginnis	Ruth Belle Sell
Anthony Joseph Maniscalco	Julian Lee Shapiro
Louis Henry Meyer	Zue Belle Shaw
Maurice Joseph Meynier	William Gilmore Smiley, Jr.
Cecil Franklin Miller	Annie Jo Smith
Harvin Cooper Moore—With Distinction	Homer Alvin Smith
Virginia Livingston Morgan	Will Rivers Smith
William Byron Morgan	

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Mary Lynn Stevenson	Wash Underwood
Mary Virginia Street	Irene Alice Ward
Russell Edward Stuart	Eugene Werlin
John Wise Sutton	Addlean Estella White
Shirley Cowen Thomas— With Distinction	Rachel Sabra Whiteley
Katherine Otilla Thompson	Richard Thompson Wil- banks
Margaret Christina Thomp- son	Emile Zax—With Distinc- tion
George Alfred Titterington	

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

William Glen Copeland	Max Werner Neuhaus
William Edward Fox	Ernest Robert Rechel
Brian Holden	Frank Wannall Stones

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Joe Barkley Alexander	John Blythe Halton Hender- son
Philip Ernest Barber, Jr.	
James Leo Boswell	Walter Banard Joseph
William Russell Feather	Walter Parker Moore— With Distinction
Claude Taylor Fuqua, Jr.— With Distinction	Rolland Winfield Phillips
	Ernest Bailey Yeatts

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

William Franklin Black	James H. Hunter, Jr.
William Edwin Daniels, Jr.	Thomas Joseph Johnson
Ranald MacDonald Garri- son	Mason Graves Lockwood
Frank Waldman Godsey, Jr.	Paul Gordon Perry
	Robert Clinton Wallis, Jr.

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BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Edward Hebert Austin	John Wilson Shacklett
Edward Fenton Cooke, Jr.	

BACHELOR OF SCIENCE IN ARCHITECTURE

Edward Bowers Arrants	Clarence Alfred Johnson
James Ira Campbell	King Rhodes Ransom
Claude Edgar Hooton	Oliver Cooper Winston

CHEMICAL ENGINEER

Thomas Verner Moore

MASTER OF ARTS

Ernest Eugene Blondeau	Deborah May Hickey
Morgan Steele Carson	Gordon Lee Locher
William Maurice Ewing	Robert Stanley Radcliffe
Norma Ruth Greenhill	George Holmes Richter

DOCTOR OF PHILOSOPHY

Everett Ellis Porter

SCHOLARSHIPS AWARDED FOR 1927-28

THE GRAHAM BAKER STUDENT

William Richard Bridgwater, Class 1928, of Houston, Texas

THE HOHENTHAL SCHOLARS

(Alphabetical)

Vaughn Shaffer Albertson, Class 1928, of Dallas, Texas
Edwin Ford Beckenbach, Class 1928, of Dallas, Texas
Richard Wilson Keeling, Class 1929, of Houston, Texas
Lola Annette Parker, Class 1928, of Houston, Texas
Irene Esther Schuppan, Class 1929, of Houston, Texas
Pierce McDonald Williamson, Class 1929, of Dallas, Texas

THE RICE INSTITUTE

THE SHARP SCHOLARS IN CIVICS AND PHILANTHROPY

(Alphabetical)

Ethel Farrington McConnell, B.A. (Rice) 1926, of Athens,
Alabama

Herbert Stevenson McConnell, Class 1928, of Tampico,
Mexico

THE SCHOLAR OF THE JOHN MCKNITT ALEXANDER CHAPTER, DAUGHTERS OF THE AMERICAN REVOLUTION

Anita Dee Stewart, Class 1929, of Houston, Texas

THE ELLEN AXSON WILSON SCHOLAR

Mary Elanor Trotter, Class 1929, of Houston, Texas

THE ELIZABETH BALDWIN LITERARY SOCIETY SCHOLAR

Lyle Leroy Payne, Class 1929, of Louise, Texas

THE PALLAS ATHENA LITERARY SOCIETY SCHOLAR

Katie Boxley, Class 1928, of Palestine, Texas

THE ASSOCIATION OF RICE ALUMNI SCHOLAR

Benjamin Goodwin Chitwood, Class 1928, of Lubbock,
Texas

THE DANIEL RIPLEY SCHOLAR

Luke Osburn, Class 1930, of Webster, Texas

TRAVELLING FELLOW

Meredith Vernon McDougal, B.A. (Rice) 1926, of Houston,
Texas

LIST OF STUDENTS

1927-28

LIST OF STUDENTS

GRADUATE STUDENTS

- Banta, Henry Eugene* *Electra, Texas*
B.A., Rice, 1927
- Bishkin, Sam Leon. *Houston, Texas*
B.S., Rice, 1924
- Blondeau, Ernest Eugene* . . *Houston, Texas*
B.A., Rice, 1926
M.A., Rice, 1927
- Bull, Clyde Ferguson* *Houston, Texas*
B.A., Rice, 1926
- Cage, Chaille Margaret. . . . *Houston, Texas*
B.A., Wellesley, 1925
- Campbell, John Stuart*. . . . *Pasadena, California*
B.S., California Institute of Technology, 1926
- Carothers, Mary Towell . . . *Houston, Texas*
Bachelor of Literature, University of Texas, 1901
- Cunningham, Geoffrey Everett* *Little Rock, Arkansas*
B.S., Tulane, 1923, M.S., Tulane, 1925
- Deffebach, Betty Ward. . . . *Houston, Texas*
B.A., University of Texas, 1919
- Dix, Charles Hewett*. *Pasadena, California*
B.S., California Institute of Technology, 1927
- Durham, Edward Josephi* . . *Portland, Oregon*
B.A., Reed College, 1924
- Edmonson, Nat, Jr.*. *Sherman, Texas*
B.A., Austin College, 1924

* Candidacy for advanced degree approved.

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- Ellis, Lacoste George. *Houston, Texas*
B.A., Rice, 1927
- Embry, Mary Louise. *Houston, Texas*
B.A., Rice, 1927
- Engerrand, Jacques Jean *Austin, Texas*
B.A., University of Texas, 1927
- Ewing, William Maurice*. . . . *Lockney, Texas*
B.A., Rice, 1926
M.A., Rice, 1927
- Hickey, Deborah May *Houston, Texas*
B.A., Rice, 1926
M.A., Rice, 1927
- Hoffman, Henry Schwarz. *Houston, Texas*
B.A., Rice, 1927
- Hooton, Claude Edgar* *Houston, Texas*
B.S., Rice, 1927
- Hutson, Emily* *Houston, Texas*
B.A., Rice, 1927
- Johnson, Clyde Roland* *Portland, Oregon*
B.A., Reed College, 1925
- Keating, Bernice Jeannette*. . . *Waco, Texas*
B.A., Baylor University, 1926
- Keeling, Harriet Maxwell. . . . *Houston, Texas*
B.A., Baker, 1906
- King, Arthur George. *Gatesville, Texas*
B.A., Rice, 1927
- Kirner, Juvanta Harper* *Houston, Texas*
B.A., Wellesley, 1924
- Lillard, Eugene Patterson* . . . *Kaufman, Texas*
B.A., Rice, 1927

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- Locher, Gordon Lee*. *Parkville, Missouri*
B.A., Park College, 1925
M.A., Rice, 1927
- Loftis, Bernice Bell. *Dallas, Texas*
B.A., Rice, 1923
- Lurie, Elizabeth. *Houston, Texas*
B.A., Rice, 1927
- McConnell, Ethel Farrington*. *Athens, Alabama*
B.A., Rice, 1926
- McGinty, Milton Bowles . . . *Houston, Texas*
B.A., Rice, 1927
- Mack, Guilford Leroy*. . . . *Corvallis, Oregon*
B.S., Oregon Agricultural College, 1927
- Moore, Harvin Cooper *Houston, Texas*
B.A., Rice, 1927
- Morgan, William Byron . . . *Houston, Texas*
B.A., Rice, 1927
- Parker, Edith T. *Louisville, Kentucky*
B.A., University of Louisville, 1920
M.A., Columbia, 1924
- Porter, Walter Lee. *Houston, Texas*
B.A., Howard College, 1911
M.S., Agricultural and Mechanical College of Texas, 1926
- Powars, Mary Augusta. . . . *Houston, Texas*
B.A., Rice, 1927
- Rhodes, Gene *Houston, Texas*
B.A., Rice, 1927
- Richter, George Holmes* . . . *Dallas, Texas*
B.A., Rice, 1926
M.A., Rice, 1927

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- Shelton, Fred Vernon* *Hubbard, Texas*
B.A., Rice, 1926
- Smiley, William Gilmore *Houston, Texas*
B.A., Rice, 1927
- Spampinato, Michael *Mart, Texas*
B.A., Rice, 1926
- Stones, Frank Wannall* *Houston, Texas*
B.S., Rice, 1927
- Topham, Laura*. *Houston, Texas*
B.A., Kansas University, 1918
- Vaughan, Vernice Ellen *New York City, New York*
B.A., College of St. Catherine, 1926
- Watson, Cecil Jewel *Granger, Texas*
B.S., Rice, 1926

SENIORS*

- Adams, Keeling Henry *Houston, Texas*
- Albertson, Vaughn Shaffer . . *Dallas, Texas*
- Allen, Frank Torence, Jr. . . . *Brenham, Texas*
- Anderson, Martha Josephine . *Houston, Texas*
- Armstrong, Baker White *Houston, Texas*
- Badger, Elizabeth Miriam. . . . *Houston, Texas*
- Barnes, Dorothy Ruth *Houston, Texas*
- Barr, Tom William *Dallas, Texas*
- Beckenbach, Edwin Ford. . . . *Dallas, Texas*
- Bell, Charles Harrison *Waco, Texas*
- Bennett, Sam Henry. *Arlington, Texas*
- Bennett, William Foster *Arlington, Texas*
- Biggers, Alice Adele Tryon . . *Houston, Texas*
- Billups, J T *Winters, Texas*

* Classified October 1, 1927.

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Blackwell, Ruth Van Pelt. . .	<i>Houston, Texas</i>
Blair, Janet.	<i>Clarksville, Texas</i>
Bloxsom, George Graham. . .	<i>Houston, Texas</i>
Boelsche, Leslie	<i>Industry, Texas</i>
Boone, Walter Goodrich . . .	<i>Navasota, Texas</i>
Bourdon, Lynn Louis	<i>Houston, Texas</i>
Bourland, Joseph Wilbur, Jr. .	<i>Dallas, Texas</i>
Boxley, Clara Katie	<i>Palestine, Texas</i>
Boynton, George Robert . . .	<i>Bellville, Texas</i>
Briggs, David Todd	<i>Houston, Texas</i>
Bridgwater, William Richard .	<i>Houston, Texas</i>
Bright, Mamie	<i>Houston, Texas</i>
Brisbine, Evelyn Jo	<i>Houston, Texas</i>
Brooks, Catherine Marguerite	<i>Houston, Texas</i>
Buhler, Charles Michael, Jr. .	<i>Victoria, Texas</i>
Bush, Charles Richard	<i>El Paso, Texas</i>
Butcher, John Henry.	<i>Dallas, Texas</i>
Byrne, Anne Claire	<i>Houston, Texas</i>
Cabaniss, Weldon Burk	<i>Lockhart, Texas</i>
Cairns, Adrian Bennett. . . .	<i>Houston, Texas</i>
Canterberry, Clarence Wesley.	<i>Longview, Texas</i>
Chairez, Francisco Puente . .	<i>Houston, Texas</i>
Chapman, Thomas Shelby . . .	<i>McAlester, Oklahoma</i>
Chitwood, Benjamin Goodwin.	<i>Lubbock, Texas</i>
Clark, John Hogan.	<i>Houston, Texas</i>
Clarke, Helen Cartland. . . .	<i>Houston, Texas</i>
Cook, Clara Frances Louise. .	<i>Houston, Texas</i>
Copeland, Dorothy West . . .	<i>Houston, Texas</i>
Crenshaw, Marvin Ancel	<i>South Houston, Texas</i>
DaCamara, Randolph Lawrence	<i>Laredo, Texas</i>
Davies, Joseph Ilott	<i>Houston, Texas</i>

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Dawson, Frank Mathews. . . .	<i>Houston, Texas</i>
Dawson, John Robert	<i>Harrisburg, Texas</i>
Dawson, Will Raymond	<i>Sinton, Texas</i>
Denman, Arthur Bryan. . . .	<i>Houston, Texas</i>
Discher, Erwin Rudolph	<i>Shiner, Texas</i>
Duff, Lura Hannah	<i>Houston, Texas</i>
Duggan, Edmund Buchwalter.	<i>Belton, Texas</i>
Dwigans, Forrest Payne	<i>Ganado, Texas</i>
Duffie, Ed	<i>Goose Creek, Texas</i>
Eckert, Milton Kirsch	<i>Houston, Texas</i>
Fischer, Otis Rose	<i>Houston, Texas</i>
Flagg, Archer Chrestian	<i>Malakoff, Texas</i>
Fondren, Catherine	<i>Houston, Texas</i>
Franklin, Wallace Collin	<i>Tulsa, Oklahoma</i>
Friedman, Lloyd Kling.	<i>Beaumont, Texas</i>
Furman, Herbert John	<i>Houston, Texas</i>
Gammel, Murry Jesse	<i>Houston, Texas</i>
Gammill, Oscar Elbridge, Jr. . .	<i>Shreveport, Louisiana</i>
Gehret, Marguerite Marie Louise	<i>Houston, Texas</i>
Gill, Atherton Leslie	<i>Houston, Texas</i>
Goodman, Virginia Frances . . .	<i>Houston, Texas</i>
Grace, William Jeffries	<i>Dallas, Texas</i>
Grant, James Henry	<i>Houston, Texas</i>
Grant, Richard Stephen	<i>Pascagoula, Mississippi</i>
Green, Ola Mae	<i>Houston, Texas</i>
Haggart, Margaret Jennie	<i>Houston, Texas</i>
Hall, Walter Gardner	<i>League City, Texas</i>
Hamilton, Charles D. Whiteley	<i>Houston, Texas</i>
Hardy, Sidney Baron.	<i>Galveston, Texas</i>
Harless, Charles Malcolm. . . .	<i>Gulfport, Mississippi</i>
Harris, Dixie Kathryn	<i>Houston, Texas</i>

ANNOUNCEMENTS

Hart, Gaylord Anthony	<i>Dallas, Texas</i>
Herring, Elmer	<i>Victoria, Texas</i>
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Hibbler, Mary Helen.	<i>Houston, Texas</i>
Hickey, Maude Isabel	<i>Houston, Texas</i>
Hildenbrand, Avarilla Grace. .	<i>Houston, Texas</i>
Hill, Troy David	<i>Bonham, Texas</i>
Hillsman, Joseph Winston. . .	<i>Houston, Texas</i>
Hood, Matilda Dale	<i>Birmingham, Alabama</i>
Howard, Dora Alice	<i>Houston, Texas</i>
Howerton, Bert Paul.	<i>Corpus Christi, Texas</i>
Hull, Margaret Whitfield . . .	<i>Houston, Texas</i>
Inkley, Mary Josephine	<i>Houston, Texas</i>
James, Edith Moore	<i>Houston, Texas</i>
Jenkins, William Fountain . .	<i>Houston, Texas</i>
Jett, Mary Virginia	<i>Houston, Texas</i>
Jinks, Leola Jewel	<i>Houston, Texas</i>
Kitchell, James Roderick . . .	<i>Houston, Texas</i>
Kreamer, Karl K.	<i>Lake Charles, Louisiana</i>
Kreimeyer, James Harolde . .	<i>Port Arthur, Texas</i>
Lay, Anna Rebecca	<i>Denison, Texas</i>
Lay, Roy Livingston.	<i>Yoakum, Texas</i>
Liljestrand, Milton Oliver. . .	<i>Weslaco, Texas</i>
Livengood, Helen	<i>Bay City, Texas</i>
Livergood, Russell	<i>Houston, Texas</i>
Lockman, Marjorie Adair. . .	<i>Houston, Texas</i>
Loughridge, Robert Foster . .	<i>Waco, Texas</i>
Louis, Bliss	<i>Houston, Texas</i>
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McConnell, Herbert Stevenson	<i>Tampico, Mexico</i>

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McKenna, Justine Frances . .	<i>Houston, Texas</i>
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Melton, Bessie	<i>Houston, Texas</i>
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Miller, Charles Arthur	<i>Kempner, Texas</i>
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Reynolds, Anne Elizabeth	<i>Houston, Texas</i>
Reynolds, Frank Fisher	<i>Houston, Texas</i>
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Rienhardt, Clyde Thomas	<i>Houston, Texas</i>
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Rogers, Marian Viola	<i>Houston, Texas</i>
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Runion, Felix Anthony.	<i>Houston, Texas</i>
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Shannon, Jack Phillip	<i>Houston, Texas</i>
Sherwood, Marie Elizabeth	<i>Houston, Texas</i>
Shofstall, Norton Forbes	<i>Houston, Texas</i>
Sloan, Clarence Herbert	<i>Houston, Texas</i>
Smith, Frances May	<i>Houston, Texas</i>
Smith, Julia Bishop	<i>Houston, Texas</i>
Spencer, Marian.	<i>Houston, Texas</i>
Spencer, Roy Dodd	<i>Houston, Texas</i>
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Stephens, Mary Geneva	<i>Houston, Texas</i>
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Turrentine, Robert Emmett, Jr.	<i>Houston, Texas</i>
Vaughan, Willard Gordon	<i>Houston, Texas</i>
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Waples, Ruth Grafton	<i>Houston, Texas</i>
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Westheimer, Eugene Gerald	<i>Houston, Texas</i>
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Wildman, Enid Isobel	<i>Bellaire, Texas</i>
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Wilson, Kathryn Elizabeth	<i>Houston, Texas</i>
Winston, George Jackson	<i>Houston, Texas</i>
Womack, Zemma Erwin	<i>Houston, Texas</i>
Woodruff, Ella Frances	<i>Houston, Texas</i>
Woods, Henry Barnes	<i>Pembroke, Maine</i>
Woodward, Margaret Ruth	<i>Houston, Texas</i>
Worley, Will Ellis	<i>Houston, Texas</i>
Wright, Arthur G., Jr.	<i>Dallas, Texas</i>
Wright, John Harris	<i>Houston, Texas</i>
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ANNOUNCEMENTS

JUNIORS*

Ables, Philip Augustus	<i>Texarkana, Texas</i>
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Allen, Herbert.	<i>Lufkin, Texas</i>
Allnoch, Joseph Daniel. . . .	<i>Houston, Texas</i>
Allnoch, Martha Agnes. . . .	<i>Houston, Texas</i>
Alsup, Patti Jean	<i>Galveston, Texas</i>
Appell, William Morris. . . .	<i>Waco, Texas</i>
Appleman, Lois Ethel	<i>Beaumont, Texas</i>
Appling, George Jeffries . . .	<i>El Campo, Texas</i>
Archer, Florence Lillian . . .	<i>Houston, Texas</i>
Ash, Beatrice Eleanor	<i>Abilene, Texas</i>
Ashworth, Robert William . .	<i>Houston, Texas</i>
Avnet, Isadore	<i>Houston, Texas</i>
Axelrod, Isadore Meyer . . .	<i>Houston, Texas</i>
Axtell, Frank Foy	<i>Port Arthur, Texas</i>
Baehr, John Fain	<i>Houston, Texas</i>
Bailey, William Stuart	<i>Houston, Texas</i>
Baker, Malcolm Graham . . .	<i>Houston, Texas</i>
Ball, Gladys Martin	<i>Houston, Texas</i>
Barnes, Roy Trimble.	<i>Fort Worth, Texas</i>
Barreda, Maria Ana	<i>Laredo, Texas</i>
Beall, William Henry	<i>Alice, Texas</i>
Beissner, Henry Martin, Jr. .	<i>Galveston, Texas</i>
Bell, Walter Garland.	<i>Edmond, Oklahoma</i>
Benbury, Lemuel Schumacher.	<i>Houston, Texas</i>
Benbury, Thomas, Jr.	<i>Houston, Texas</i>
Berger, Aaron.	<i>New York City, New York</i>
Bering, Florence Catherine . .	<i>Houston, Texas</i>

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Bertrand, Charles Hermogene .	<i>San Antonio, Texas</i>
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Black, David Harkness.	<i>San Antonio, Texas</i>
Blackstone, Francis Bigelow. .	<i>Oklahoma City, Oklahoma</i>
Boettcher, Dorothy Laurine. .	<i>Houston, Texas</i>
Boone, Mary Elizabeth.	<i>Houston, Texas</i>
Borne, Herman G.	<i>Houston, Texas</i>
Bourgeois, Jasper Lesley . . .	<i>Welsh, Louisiana</i>
Bower, Benjamine James . . .	<i>Houston, Texas</i>
Braden, Felix Spurgeon. . . .	<i>Winnsboro, Texas</i>
Branch, Eleanor.	<i>Houston, Texas</i>
Breymann, Paul Anthony, Jr.	<i>Schulenburg, Texas</i>
Britton, James Lanier	<i>Houston, Texas</i>
Brown, Esther Louise	<i>Houston, Texas</i>
Brown, Mary Margaret	<i>Houston, Texas</i>
Bryan, Madolyn Cartier	<i>Houston, Texas</i>
Buchanan, Margaret Elizabeth	<i>Dickinson, Texas</i>
Byrne, Robert Leroy.	<i>Houston, Texas</i>
Callaham, Dorris D.	<i>Houston, Texas</i>
Campbell, Mary Sanford	<i>Houston, Texas</i>
Castellanos, Louis	<i>Houston, Texas</i>
Clark, Miles Wayne	<i>Rosenberg, Texas</i>
Clay, Noima Leona	<i>Houston, Texas</i>
Cleaves, Wilbur Shaw	<i>Houston, Texas</i>
Cole, Mildred Elizabeth	<i>Houston, Texas</i>
Collier, James Leath	<i>Houston, Texas</i>
Comstock, Ralph Merle	<i>El Campo, Texas</i>
Cornelius, Adrian Cowden . . .	<i>Houston, Texas</i>
Coulter, Evelyn Lee	<i>Houston, Texas</i>
Covin, Jack Gordon	<i>Marshall, Texas</i>

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Cowan, Lady Gertrude Adele	<i>Houston, Texas</i>
Cox, Kate Markham	<i>Monroe, Louisiana</i>
Crain, Robert Levan	<i>Houston, Texas</i>
Crockett, Claude Tarrant	<i>Houston, Texas</i>
Cronin, Thomas Dillon	<i>Houston, Texas</i>
Cull, Herbart Graham	<i>Houston, Texas</i>
Daley, Thomas Ellis	<i>Houston, Texas</i>
Davis, William Roy	<i>Texarkana, Arkansas</i>
Deen, Tully Romulus	<i>Cleburne, Texas</i>
Derrick, Bernadine Louise	<i>Houston, Texas</i>
Downs, George LeRoy	<i>Houston, Texas</i>
Dreaper, Ruth Louise	<i>Houston, Texas</i>
Earthman, Jamie Catherine	<i>Houston, Texas</i>
Epley, Evelyn Jane	<i>Fairbanks, Texas</i>
Evershade, Fredika Amelia	<i>Houston, Texas</i>
Farrington, Mina Lee	<i>Houston, Texas</i>
Fields, William Allen	<i>Houston, Texas</i>
Filson, Cleora Cluff	<i>Houston, Texas</i>
Flaxman, Felice Julia	<i>Houston, Texas</i>
Flynn, James Graham	<i>Houston, Texas</i>
Fonville, Beverly Henrietta	<i>Houston, Texas</i>
Foote, Stephen Alexander	<i>Houston, Texas</i>
Fouts, Herbert Eugene	<i>Houston, Texas</i>
Franzen, Arnold Bartel	<i>Collegeport, Texas</i>
Franzen, Dorothy Helen	<i>Collegeport, Texas</i>
Frazer, Mabel Crede	<i>Alief, Texas</i>
Gammill, Lorene Martha	<i>Houston, Texas</i>
George, John Emmanuel	<i>Houston, Texas</i>
Gorski, Jeanette	<i>Houston, Texas</i>
Gragg, John Edwin	<i>Dallas, Texas</i>
Grebe, Harry Albert	<i>Etzatlán, Jalisco, Mexico</i>

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Greer, John Nelson	<i>Texas City, Texas</i>
Griffin, George Chester.	<i>Galveston, Texas</i>
Gullette, Bayliss Edwards	<i>Houston, Texas</i>
Gunter, Tom Bragg	<i>Alice, Texas</i>
Hall, Elouise Mastin.	<i>Houston, Texas</i>
Hamilton, Lawrence Ade	<i>Houston, Texas</i>
Hamilton, Mary Bernardine.	<i>Houston, Texas</i>
Hamilton, Patricia Neale	<i>Houston, Texas</i>
Hawley, George Newton	<i>Houston, Texas</i>
Hayes, Marjorie.	<i>Liberty, Texas</i>
Hickey, Ernest Pleasanton	<i>Houston, Texas</i>
Holland, John Gillespie.	<i>Jacksonville, Texas</i>
Holt, Percy Rosson	<i>Kilgore, Texas</i>
Hovas, Alice Manning	<i>Houston, Texas</i>
Howze, Edith Ellen	<i>Houston, Texas</i>
Howze, Mildred	<i>Houston, Texas</i>
Hutton, Fay Etta	<i>Houston, Texas</i>
Jacobe, Madelin.	<i>Houston, Texas</i>
Jacobs, Annie Oma	<i>Houston, Texas</i>
Jahnke, Henriette Marie	<i>Houston, Texas</i>
Jeanes, Maxine Lenore	<i>Houston, Texas</i>
Johnson, Ralph Grant	<i>El Campo, Texas</i>
Karnaky, Carl Buster	<i>Houston, Texas</i>
Kean, Clare Hibberd.	<i>Catarina, Texas</i>
Keeling, Richard Wilson	<i>Houston, Texas</i>
Keene, Menard Clyde	<i>Galveston, Texas</i>
Kehoe, Andrew Jackson	<i>Houston, Texas</i>
Kemp, Lebbeus Courtright	<i>Houston, Texas</i>
Kendall, Graham	<i>Dallas, Texas</i>
King, Bernice Victoria	<i>Houston, Texas</i>
King, Floyd A.	<i>Houston, Texas</i>

ANNOUNCEMENTS

Klanke, Charles William . . .	<i>Houston, Texas</i>
Klanke, Virginia Ruby . . .	<i>Houston, Texas</i>
Knippel, Joe James . . .	<i>Fayetteville, Texas</i>
Kobs, Darcey Gus. . .	<i>Houston, Texas</i>
Koeppel, Earl Emmit. . .	<i>Fort Worth, Texas</i>
Kuhlmann, Dorothy Frances .	<i>Houston, Texas</i>
Lallier, Charline Estelle . .	<i>Houston, Texas</i>
Lamkin, Stuart Lyle . . .	<i>Fort Worth, Texas</i>
LaTour, Parvin Lazaro. . .	<i>Welsh, Louisiana</i>
Lawhon, James Griffith. . .	<i>Houston, Texas</i>
Lenoir, Louise. . .	<i>Houston, Texas</i>
Long, Mildred Louise . . .	<i>Houston, Texas</i>
Lovejoy, William Reece . . .	<i>Houston, Texas</i>
Lowe, Thomas Elton. . .	<i>Houston, Texas</i>
McCarthy, James Erwin . . .	<i>Houston, Texas</i>
McCloy, Ruth Briscoe . . .	<i>Houston, Texas</i>
McElreath, Clarence Ross . .	<i>Fort Worth, Texas</i>
McFerran, Willavie . . .	<i>Houston, Texas</i>
McNeill, James Calvin . . .	<i>Spur, Texas</i>
McNeir, Waldo Forrest. . .	<i>Houston, Texas</i>
McWhorter, Cullen Joseph . .	<i>Houston, Texas</i>
Madero, Salvador Joseph, Jr. .	<i>Parras, Coahuila, Mexico</i>
Mann, Charles Wellington . .	<i>Longview, Texas</i>
Marmion, William Henry. . .	<i>Houston, Texas</i>
Marshall, Marjorie Ann . . .	<i>Houston, Texas</i>
Matthaei, Rose Edith . . .	<i>Houston, Texas</i>
Matthes, Homer Clarence. . .	<i>Ganado, Texas</i>
Matthews, Clara May . . .	<i>Houston, Texas</i>
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Motheral, Julia Ellen	<i>Houston, Texas</i>
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Peterson, Richard Bernard . .	<i>Arlington, Texas</i>
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Powers, Raymond Harris	<i>Crockett, Texas</i>
Rainbolt, Tom Marion	<i>Houston, Texas</i>
Rainey, Ellen Nona	<i>Houston, Texas</i>
Rawlinson, William Pierce . .	<i>Silsbee, Texas</i>
Rich, Rachael Dies	<i>Houston, Texas</i>
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Richker, Charles.	<i>Beaumont, Texas</i>

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Robb, Egerton Seitz	<i>Houston, Texas</i>
Rogers, Joe Emory	<i>Fort Worth, Texas</i>
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Ross, Ernest Osgood	<i>Houston, Texas</i>
Rugeley, Rowland Boyd . . .	<i>Montague, Texas</i>
Salerno, Joe Peter	<i>Houston, Texas</i>
Schaefer, Bernice	<i>Houston, Texas</i>
Schlom, Zelda	<i>Greenville, Mississippi</i>
Schuppan, Irene Esther . . .	<i>Houston, Texas</i>
Schuppan, Irma Margaret . .	<i>Houston, Texas</i>
Schwartz, Cherry Lisette . .	<i>Houston, Texas</i>
Scott, Margaret Matilda . . .	<i>Houston, Texas</i>
Seward, Buford Miller	<i>Knippa, Texas</i>
Sewell, Bonner Gardner . . .	<i>Houston, Texas</i>
Shaw, Mary	<i>Galveston, Texas</i>
Shaw, Willard Henry.	<i>Kirbyville, Texas</i>
Skimek, Edwin Joe	<i>Weimar, Texas</i>
Sikes, Samuel Tillotson, Jr. .	<i>Houston, Texas</i>
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Smith, Oquilla	<i>Houston, Texas</i>
Smith, Philip Bertram	<i>Galveston, Texas</i>
South, Ida	<i>Houston, Texas</i>
Sprague, John Malcolm . . .	<i>Houston, Texas</i>
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Talley, Robert William. . . .	<i>Houston, Texas</i>
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Taylor, William Josiah	<i>Houston, Texas</i>
Townsend, Henry	<i>Houston, Texas</i>
Trotter, Mary Elanor	<i>Houston, Texas</i>
Underwood, Rosalie Mary. . .	<i>Galveston, Texas</i>
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Wagoner, J. T.	<i>Arlington, Texas</i>
Walker, Mary Elizabeth	<i>Houston, Texas</i>
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Weichert, Rudolph Frederick .	<i>Welsh, Louisiana</i>
Wilkens, Henry	<i>Galveston, Texas</i>
Williams, Cecil David	<i>Kirkland, Texas</i>
Williams, Charlotte Gwynne .	<i>Houston, Texas</i>
Williamson, Pierce McDonald.	<i>Dallas, Texas</i>
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Wilson, Ernest Bradley.	<i>Houston, Texas</i>
Winans, Robert Henry	<i>Shawnee, Oklahoma</i>
Wise, Frederick Nathaniel . . .	<i>Houston, Texas</i>
Wood, Thomas Ogden	<i>Houston, Texas</i>
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Yancey, John Richard	<i>Sicily Island, Louisiana</i>
Yarbrough, Jack.	<i>Sweetwater, Texas</i>
Yates, Charles Wilbur	<i>Rosenberg, Texas</i>

ANNOUNCEMENTS

SOPHOMORES*

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Aleo, Charles, Jr.	<i>Houston, Texas</i>
Alfano, Sam	<i>Houston, Texas</i>
Andrews, Forrest Lee	<i>Houston, Texas</i>
Armstrong, Robert Alva . . .	<i>Dallas, Texas</i>
Arnold, Bryan Bailey	<i>Henderson, Texas</i>
Arnold, John Henrie	<i>Houston, Texas</i>
Arnold, William French . . .	<i>Henderson, Texas</i>
Arrants, Sarah Kathryn . . .	<i>Dallas, Texas</i>
Austin, Frank Otis.	<i>Houston, Texas</i>
Avant, Hugh Clifford	<i>Birmingham, Alabama</i>
Axelrad, Bernard Alexander. .	<i>Houston, Texas</i>
Axelrod, Jake	<i>Houston, Texas</i>
Bagby, Scott Clark	<i>Corsicana, Texas</i>
Bailey, Iris Isabelle	<i>Houston, Texas</i>
Baker, Mary Louise	<i>Houston, Texas</i>
Bandera, Hope Margaret . . .	<i>Houston, Texas</i>
Barnes, Ethel McDonald . . .	<i>Houston, Texas</i>
Bassel, Byron Allen	<i>Belton, Texas</i>
Bayne, Harry Lee	<i>Houston, Texas</i>
Beaver, John Robertson . . .	<i>Godley, Texas</i>
Becker, Ella Margaret	<i>Houston, Texas</i>
Becker, Isabel Louise	<i>Houston, Texas</i>
Bellamy, Richard Claud . . .	<i>Houston, Texas</i>
Bennett, Malcolm Dorden . .	<i>Houston, Texas</i>
Berry, Mary Hallie	<i>Houston, Texas</i>
Berryman, Josephine.	<i>Wichita Falls, Texas</i>

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Bethany, Dorothy Crew . . .	<i>Houston, Texas</i>
Billingsley, Archie Lloyd . . .	<i>Houston, Texas</i>
Binford, James Robert, Jr. . .	<i>Dallas, Texas</i>
Black, Frances Emma	<i>Houston, Texas</i>
Blackstone, Theodore Putnam.	<i>Houston, Texas</i>
Blake, Lillie.	<i>Floresville, Texas</i>
Bland, Lenore.	<i>Houston, Texas</i>
Boe, Eddie Selmer.	<i>Houston, Texas</i>
Bollfrass, Herbert Bernard . .	<i>Houston, Texas</i>
Boone, Bonnie	<i>Houston, Texas</i>
Brandt, Blanche LaDelle . . .	<i>Houston, Texas</i>
Bretschneider, Dorothy Gertrude	<i>Houston, Texas</i>
Brewer, Josephine	<i>Houston, Texas</i>
Brisbine, Kathryn V.	<i>Houston, Texas</i>
Brooks, Katherine Augusta . .	<i>Palestine, Texas</i>
Brown, Howard Fletcher . . .	<i>Houston, Texas</i>
Brown, John Benjiman. . . .	<i>Houston, Texas</i>
Brunet, Roberta Laird	<i>Houston, Texas</i>
Brunson, Emmett Evander . .	<i>Houston, Texas</i>
Bryan, Maude Amanda	<i>Houston, Texas</i>
Bullington, Frankie Maude . .	<i>Houston, Texas</i>
Burch, James Reginald. . . .	<i>Dallas, Texas</i>
Bush, Maurine Leola.	<i>Houston, Texas</i>
Cain, James.	<i>Houston, Texas</i>
Cain, John	<i>Houston, Texas</i>
Caldwell, Allen Harn.	<i>Houston, Texas</i>
Calvert, Robert Ezra.	<i>Houston, Texas</i>
Calvin, Elvis Aubrey.	<i>Houston, Texas</i>
Campbell, Ruth Earline . . .	<i>Houston, Texas</i>
Campbell, William Edwin . .	<i>Dallas, Texas</i>
Canseco, Francisco Manuel . .	<i>Laredo, Texas</i>

ANNOUNCEMENTS

Carmichael, John Connally . . .	<i>Sabinal, Texas</i>
Carothers, Durell Miller . . .	<i>Houston, Texas</i>
Carroll, Florence	<i>Houston, Texas</i>
Carroll, James Vincent . . .	<i>Brenham, Texas</i>
Carroll, Mary Josephine . . .	<i>Houston, Texas</i>
Cary, Marjorie Long.	<i>Houston, Texas</i>
Case, Van Bernard, Jr.	<i>Houston, Texas</i>
Caswell, Charles Clifford . . .	<i>Houston, Texas</i>
Chambers, Cress Roy	<i>Mart, Texas</i>
Chavanne, Philip Matson. . .	<i>Lake Charles, Louisiana</i>
Chun, Harold August	<i>Houston, Texas</i>
Clark, Albert Irving	<i>Galveston, Texas</i>
Clugston, Albert James. . . .	<i>Welsh, Louisiana</i>
Cohn, Harold Jerome	<i>Houston, Texas</i>
Compton, Dorothy Cuny. . . .	<i>Houston, Texas</i>
Connell, Winston Dunlap. . .	<i>Houston, Texas</i>
Cooke, Marian Ada	<i>Houston, Texas</i>
Coombs, Virginia Dee	<i>Houston, Texas</i>
Coon, George Elmo	<i>Fort Worth, Texas</i>
Cooper, Robert Manton	<i>Olney, Texas</i>
Correll, Edward Lawrance . .	<i>El Campo, Texas</i>
Coughlin, Marie Elizabeth . .	<i>Houston, Texas</i>
Cox, Carrie Lee	<i>Houston, Texas</i>
Craig, Fred Lyon	<i>Houston, Texas</i>
Cranz, Gus E..	<i>Fort Worth, Texas</i>
Crawford, Corinne	<i>Houston, Texas</i>
Creekmore, Wynne Louis. . .	<i>Houston, Texas</i>
Crump, Silas	<i>Houston, Texas</i>
Cullom, Mary Frances	<i>Houston, Texas</i>
Cunyus, Howell Hohmann . .	<i>Longview, Texas</i>
Curson, Elizabeth	<i>Houston, Texas</i>

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Davidson, William Horton, Jr.	<i>Houston, Texas</i>
Davis, Francis Eugene	<i>Houston, Texas</i>
Davis, Hamlet Irvine, Jr.. . .	<i>Galveston, Texas</i>
Davis, Lucile Mildred	<i>Houston, Texas</i>
Davis, Lucy Waller	<i>Houston, Texas</i>
Debney, George Charles	<i>Jasper, Texas</i>
Delaney, Mary Atkinson	<i>Angleton, Texas</i>
Dellheim, Frances	<i>Houston, Texas</i>
Dellinger, Grace Mary	<i>Taylor, Texas</i>
Dew, Lillie V.	<i>Houston, Texas</i>
Dickinson, Robert	<i>San Antonio, Texas</i>
Diederich, Elda Frances	<i>Houston, Texas</i>
Dishron, Joe Fowler	<i>Bellaire, Texas</i>
Doak, Edmond K.	<i>Taylor, Texas</i>
Dodge, Carl.	<i>Abilene, Texas</i>
Drake, Rowe Shear	<i>Winchester, Texas</i>
Durham, Harvey George	<i>San Antonio, Texas</i>
Eastham, Sarah Winfred	<i>Huntsville, Texas</i>
Eaves, Willie Mae	<i>Houston, Texas</i>
Edwards, Marie	<i>Houston, Texas</i>
Egan, Frances Josephine	<i>Houston, Texas</i>
Elliott, Mary Alice	<i>Houston, Texas</i>
Emerson, Virginia Hester. . . .	<i>Houston, Texas</i>
Ennis, Elizabeth Ann	<i>Houston, Texas</i>
Etkind, Minnie	<i>Houston, Texas</i>
Ewing, Margaret Rosalie	<i>Houston, Texas</i>
Faust, Norman William	<i>Houston, Texas</i>
Felder, Grace Hawkins.	<i>Houston, Texas</i>
Felder, Louise Ethel	<i>Houston, Texas</i>
Ferrin, Edward Eugene, Jr. . . .	<i>Houston, Texas</i>
Fertitta, Julian Joseph	<i>Baumont, Texas</i>

ANNOUNCEMENTS

Fields, Vesta Marie	<i>Houston, Texas</i>
Filteau, Charles Henry	<i>Houston, Texas</i>
Fincher, Oran A.	<i>Houston, Texas</i>
Fischer, Francis Alan.	<i>Houston, Texas</i>
Fleming, Pinckney French	<i>Houston, Texas</i>
Flukinger, Stanley Paul	<i>Houston, Texas</i>
Forbes, Al Gray	<i>Houston, Texas</i>
Forbes, Nancy Duncan	<i>Houston, Texas</i>
Foster, Frank Daniel	<i>Houston, Texas</i>
Foster, Lynn Vineyard	<i>Houston, Texas</i>
Franklin, Allen Charles.	<i>Floresville, Texas</i>
Frerichs, Johnnie Clyde	<i>Houston, Texas</i>
Fry, Edward Merrick	<i>Fort Worth, Texas</i>
Gage, John Herbert	<i>Dallas, Texas</i>
Garrett, Isaac	<i>Wharton, Texas</i>
Garrison, David Lacey	<i>Houston, Texas</i>
Garza, Elenterio de la	<i>Brownsville, Texas</i>
Gerson, Morris William	<i>Houston, Texas</i>
Geyer, Gustave John.	<i>Dallas, Texas</i>
Giddings, James Louis, Jr.	<i>Caldwell, Texas</i>
Giesike, Frances Sara	<i>Houston, Texas</i>
Goldstein, Gladys	<i>Houston, Texas</i>
Gonzalez, Diana.	<i>Houston, Texas</i>
Goss, Mary Louise.	<i>Houston, Texas</i>
Grant, Zerilda Louise	<i>Houston, Texas</i>
Gready, Margaret Helen	<i>Houston, Texas</i>
Greenwood, Joe Harris	<i>Houston, Texas</i>
Griffin, Walter Roy	<i>Houston, Texas</i>
Griggs, Catherine Elizabeth.	<i>Orange, Texas</i>
Haden, Homoiselle Carolyn.	<i>Houston, Texas</i>
Hailey, John H., Jr.	<i>Houston, Texas</i>

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Hamrick, Wendell Holmes . . .	<i>Houston, Texas</i>
Hancock, Evelyn	<i>El Campo, Texas</i>
Hancock, Rita Marie Catherine	<i>El Campo, Texas</i>
Hannon, Catherine Audrey . .	<i>Houston, Texas</i>
Harris, Page, Jr.	<i>Houston, Texas</i>
Hawthorn, Hubert Franklin. .	<i>Beaumont, Texas</i>
Head, Hardy Henry	<i>Houston, Texas</i>
Healey, James Henry, Jr. . .	<i>Memphis, Tennessee</i>
Herzik, Marguerite Undine . .	<i>Houston, Texas</i>
Heyne, Mildred Pearl	<i>Houston, Texas</i>
Hicks, Newton Alonzo	<i>Follett, Texas</i>
Hild, Scott Lee	<i>Houston, Texas</i>
Hill, Althea Jones	<i>Houston, Texas</i>
Hill, Joseph W.	<i>Edna, Texas</i>
Hillyer, Kinch, Jr.	<i>Houston, Texas</i>
Hodgson, Glen Reid	<i>Houston, Texas</i>
Hoffman, Frances Armilda . .	<i>Houston, Texas</i>
Holland, Gladys Elanor . . .	<i>Houston, Texas</i>
Hooks, Margaret Elizabeth . .	<i>Houston, Texas</i>
Hooper, William Alexander . .	<i>Waco, Texas</i>
Horlock, Lillian Elizabeth . .	<i>Houston, Texas</i>
Hotchkiss, Elizabeth.	<i>Houston, Texas</i>
Huck, Theodore Lee	<i>Houston, Texas</i>
Hutton, Doris Isobel.	<i>Houston, Texas</i>
Hyde, Nick Edward	<i>Port Arthur, Texas</i>
Illig, Carl, Jr.	<i>Houston, Texas</i>
Jacobs, Hollis Clair	<i>Yoakum, Texas</i>
Jantzen, Beatrice Louise . . .	<i>Houston, Texas</i>
John, Elizabeth	<i>Houston, Texas</i>
Johnson, Lee Harnie, Jr. . . .	<i>Harlingen, Texas</i>
Johnson, Lois Lorine.	<i>Houston, Texas</i>

ANNOUNCEMENTS

Jones, Bush, Jr.	<i>Dallas, Texas</i>
Kaplan, Solomon	<i>Houston, Texas</i>
Kayser, Lillie Louise	<i>Conroe, Texas</i>
Keith, Cecil Showman	<i>Houston, Texas</i>
Kendrick, Michael Clark	<i>Houston, Texas</i>
Kestenbergl, Louis	<i>Houston, Texas</i>
King, Lloyd Allen	<i>Houston, Texas</i>
Kirkpatrick, William Durnell	<i>Houston, Texas</i>
Klumpp, Herman Parks	<i>Runge, Texas</i>
Koehler, Alwyn Sterling	<i>Houston, Texas</i>
Koehler, Ethel Jules	<i>Yorktown, Texas</i>
Koenig, Walter	<i>Cleveland, Ohio</i>
Kottwitz, Alexis S.	<i>Houston, Texas</i>
Kramer, Kenneth Roy	<i>Dallas, Texas</i>
Kuhn, Evelyn Marie.	<i>Houston, Texas</i>
Kuminir, Roslyne	<i>Houston, Texas</i>
Laird, Zelna Lorene	<i>Houston, Texas</i>
Lamar, Lavoisier	<i>Sabinas, Coahuila, Mexico</i>
Lathrop, Barnes Fletcher.	<i>E. Las Vegas, New Mexico</i>
Lawson, Grace Margery	<i>Welsh, Louisiana</i>
Leach, Gilbert Leroy.	<i>Houston, Texas</i>
Levy, Jerome Harold.	<i>Houston, Texas</i>
Lightfoot, Maxine Ernestine	<i>Houston, Texas</i>
Lilly, Johnny Fay	<i>Houston, Texas</i>
Lisman, Melba	<i>Daisetta, Texas</i>
Lloyd, Hermon Frederick.	<i>Houston, Texas</i>
Logan, Elizabeth	<i>Houston, Texas</i>
Loggins, Katie Gladys	<i>Houston, Texas</i>
Long, Margaret Marie	<i>Houston, Texas</i>
Longcope, Donald Brooks	<i>Houston, Texas</i>
Ludeau, Bernice Edith	<i>Houston, Texas</i>

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Lukovich, Ambrose Anthony	<i>Galveston, Texas</i>
Lyles, Sanders	<i>Center, Texas</i>
Lyon, Thomas P.	<i>McGregor, Texas</i>
Lyman, Mary Chandler . . .	<i>Houston, Texas</i>
McAfee, Charles Richard, Jr.	<i>Armarillo, Texas</i>
McClelland, James Nelson . .	<i>Weslaco, Texas</i>
McCormick, Harry Walters . .	<i>Oklahoma City, Oklahoma</i>
McDaniel, Hollis Green . . .	<i>Houston, Texas</i>
McGilvray, Bernice Elizabeth	<i>Houston, Texas</i>
McGinty, Martha Evelyn . . .	<i>Houston, Texas</i>
McKellar, Marion Sloan . . .	<i>Elizabeth, Louisiana</i>
McKinney, David Hubbard . .	<i>Webster, Texas</i>
McLain, Cecil Howard	<i>Houston, Texas</i>
McMahan, Dorothy	<i>Houston, Texas</i>
McNeill, Sarah	<i>Brazoria, Texas</i>
Mackey, Elizabeth Mary . . .	<i>Houston, Texas</i>
MacRoberts, Donald Theodore	<i>Kingsville, Texas</i>
Makeig, Aliece	<i>Dumas, Texas</i>
Manuel, Briggs	<i>Houston, Texas</i>
Marchbanks, Josephine Meredith	<i>San Benito, Texas</i>
Marrs, Evelyn Elsie	<i>Houston, Texas</i>
Martin, Alex Lee	<i>Rockwall, Texas</i>
Masterson, Branch T.	<i>Houston, Texas</i>
May, David Milton	<i>Galveston, Texas</i>
Meadows, Pauline Pearl . . .	<i>Houston, Texas</i>
Meyers, Mae Estelle	<i>Liberty, Texas</i>
Mitchell, Catherine Elizabeth	<i>Houston, Texas</i>
Mooney, John Kelley	<i>Houston, Texas</i>
Morgan, Wesley Harmon, Jr.	<i>Kinmundy, Illinois</i>
Morris, Francis Arthur	<i>Houston, Texas</i>
Morris, Mary Martha	<i>Houston, Texas</i>

ANNOUNCEMENTS

Mortimer, Johnnie Lynn . . .	<i>Smithville, Texas</i>
Mounce, Whitman Denny . . .	<i>Houston, Texas</i>
Nami, Edward George	<i>Cuero, Texas</i>
Neely, Azile.	<i>Houston, Texas</i>
Neilan, Dallas Evangeline . . .	<i>Houston, Texas</i>
Nethery, Sherma Elizabeth . . .	<i>Houston, Texas</i>
Nevinger, Ralph Arthur	<i>Greenville, Illinois</i>
Nicks, Marjorie Evelyn	<i>Houston, Texas</i>
Nosler, Richard Francis	<i>Sugarland, Texas</i>
O'Brien, Charles Dallas	<i>Houston, Texas</i>
O'Brien, Felide Corinne	<i>Houston, Texas</i>
O'Brien, Rosalie.	<i>Houston, Texas</i>
Ogg, Mildred Estelle.	<i>Houston, Texas</i>
Ording, Anna Dean	<i>Orange, Texas</i>
Osburn, Luke	<i>Webster, Texas</i>
Owen, Charles W.	<i>El Campo, Texas</i>
Palmer, Frances Adelle.	<i>Houston, Texas</i>
Peckham, Aileen Elizabeth . . .	<i>Port Arthur, Texas</i>
Perkins, David Robert	<i>Houston, Texas</i>
Perry, John Stewart	<i>Houston, Texas</i>
Pickett, Milton Hardy	<i>Navasota, Texas</i>
Pierce, Abel Brown, Jr.	<i>Blessing, Texas</i>
Pond, Samuel Ross	<i>Houston, Texas</i>
Power, Frank	<i>Edna, Texas</i>
Prude, Walter Foy.	<i>Dallas, Texas</i>
Randolph, Manse Yulee	<i>Huntsville, Texas</i>
Rankin, Robb Y.	<i>Brownwood, Texas</i>
Reeder, Celia Mary	<i>Houston, Texas</i>
Reid, Elton Felix, Jr.	<i>Houston, Texas</i>
Reid, Laurance Standish	<i>Fort Worth, Texas</i>
Reynolds, Fred Atwood	<i>Fort Amador, Canal Zone</i>

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Reynolds, George Thompson, Jr.	<i>Dallas, Texas</i>
Ricker, Julia Hurd	<i>Houston, Texas</i>
Ricketts, William Frazer	<i>Rusk, Texas</i>
Ridley, John Cobb	<i>Houston, Texas</i>
Rivers, Julian Leon	<i>Elgin, Texas</i>
Roberts, Ronald Francis	<i>Houston, Texas</i>
Romero, Noelle Anna	<i>Houston, Texas</i>
Rosenzweig, Milton Meyer . . .	<i>Houston, Texas</i>
Rosheger, Vincent Philip	<i>Houston, Texas</i>
Royse, Charles Frederick	<i>Dallas, Texas</i>
Rudmose, Nelson	<i>Beaumont, Texas</i>
Sanderford, Jack Locke	<i>Ranger, Texas</i>
Sanford, Henry Howarton	<i>Ripley, Tennessee</i>
Sanguinet, Marshal R.	<i>Weslaco, Texas</i>
Schaeffer, Elga	<i>Houston, Texas</i>
Schoenfield, Alvin Paul	<i>El Campo, Texas</i>
Schwarz, Charles Norman	<i>New Orleans, Louisiana</i>
Scott, Douglas Orville :	<i>Houston, Texas</i>
Scott, Spencer Jerome	<i>Houston, Texas</i>
Seaborn, Alice Frances	<i>Houston, Texas</i>
Sexton, Harold Hugh	<i>Houston, Texas</i>
Shepard, Hazel	<i>Houston, Texas</i>
Sherrill, Ethan Allen	<i>Houston, Texas</i>
Smedes, Elizabeth Herndon . . .	<i>Houston, Texas</i>
Smith, Elizabeth Maury	<i>Houston, Texas</i>
Smith, Lewis Edwin	<i>Clemville, Texas</i>
Smith, Lewis Sidney	<i>Bastrop, Texas</i>
Smith, Marion Judson	<i>Quanah, Texas</i>
Smith, Orrien Russell	<i>Palestine, Texas</i>
Smith, Paul Allen	<i>Galveston, Texas</i>
Soffar, George	<i>Houston, Texas</i>

ANNOUNCEMENTS

Sorrells, Ruth Jean	<i>Houston, Texas</i>
Spencer, Ione	<i>Houston, Texas</i>
Spencer, Mary Catherine . . .	<i>Marlin, Texas</i>
Stallings, Norman Linwood . .	<i>Houston, Texas</i>
Stancliff, Lester Raymond . .	<i>Houston, Texas</i>
Steeger, Charlotte Hoag . . .	<i>Houston, Texas</i>
Stevenson, Edith Mary. . . .	<i>Alvin, Texas</i>
Stokes, Dorothy.	<i>Houston, Texas</i>
Stone, Raymond Ruser. . . .	<i>Houston, Texas</i>
Street, Gustavus Calder . . .	<i>Houston, Texas</i>
Stricker, Milam	<i>Houston, Texas</i>
Strong, Theodore Alfred . . .	<i>Geneva, Ohio</i>
Stuart, Margaret Sydney . . .	<i>Houston, Texas</i>
Sturgis, James Moore	<i>Denison, Texas</i>
Sullivan, Cornelius Columbia .	<i>Galveston, Texas</i>
Swanson, James Trotter, Jr. .	<i>Navasota, Texas</i>
Talbert, Oscar Cicero	<i>Waco, Texas</i>
Teague, James Udell.	<i>West Columbia, Texas</i>
Terry, Inez	<i>Houston, Texas</i>
Thomas, Evan Foster	<i>Mamaroneck, New York</i>
Thomason, Claude Wayne . . .	<i>Waxahachie, Texas</i>
Thompson, Virden Monroe . . .	<i>Dallas, Texas</i>
Tinsley, Mittie Sara	<i>Houston, Texas</i>
Tisdale, Mary Elizabeth . . .	<i>Houston, Texas</i>
Toler, Margaret Anne	<i>Houston, Texas</i>
Tolson, Rudolph Harry. . . .	<i>Sherman, Texas</i>
Torian, Adèle	<i>Houston, Texas</i>
Vandaveer, Alene Mills. . . .	<i>Houston, Texas</i>
Van Zandt, William Keesee. . .	<i>Fort Worth, Texas</i>
Vanzant, Thomas Jefferson . .	<i>Houston, Texas</i>
Vogel, Edward John	<i>Houston, Texas</i>

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Wade, Laurine Elizabeth . . .	<i>Houston, Texas</i>
Walker, Cathryn Ann . . .	<i>Houston, Texas</i>
Walker, Dorothy Crittenden .	<i>Houston, Texas</i>
Wallace, William McCree. . .	<i>Houston, Texas</i>
Wallis, Frank Birch	<i>Denison, Texas</i>
Washburn, Elizabeth.	<i>Houston, Texas</i>
Watts, Madeline Frances . . .	<i>Center, Texas</i>
Webb, Guy Reginald.	<i>Comanche, Texas</i>
Weismann, Edna Katherine. .	<i>Houston, Texas</i>
Westerfield, Edythe Geraud. .	<i>Houston, Texas</i>
Westmoreland, Janie Chapin .	<i>Eagle Lake, Texas</i>
Whinery, Robert Crumbly . .	<i>Tonkama, Oklahoma</i>
White, Genevieve	<i>Houston, Texas</i>
Williams, Nola Mae	<i>Bay City, Texas</i>
Williamson, Alice Lockett . .	<i>Houston, Texas</i>
Williamson, Tooley Elise . . .	<i>Houston, Texas</i>
Willis, Floyd	<i>Dallas, Texas</i>
Wilson, Glenn.	<i>Houston, Texas</i>
Wingler, Harvey Allen	<i>Port Arthur, Texas</i>
Withers, Mary Elizabeth . . .	<i>Houston, Texas</i>
Witte, James Durward	<i>Levita, Texas</i>
Woestemeyer, Otto Frederick .	<i>Houston, Texas</i>
Wood, Mavis	<i>Houston, Texas</i>
Woodall, Christine Elizabeth .	<i>Houston, Texas</i>
Woodward, Hal Davenport . .	<i>Houston, Texas</i>
Wortham, Maxwell Sheffield .	<i>San Antonio, Texas</i>
Wright, Mary Elizabeth	<i>Houston, Texas</i>
Wynn, John Samuel	<i>Beaumont, Texas</i>
Yeatman, Frank Raymond, Jr.	<i>Lake Charles, Louisiana</i>
Yundt, Beatrice Virginia . . .	<i>Freeport, Texas</i>
Zilker, Frances	<i>Houston, Texas</i>

ANNOUNCEMENTS

Zirbel, Nicholas Newton . . . *Houston, Texas*
Zuber, David *Houston, Texas*

FRESHMEN*

Abbott, Marvin Brown *Pasadena, Texas*
Acheson, Volney Archibald . . *Denison, Texas*
Adams, Charlie Clifton *Smithville, Texas*
Albritton, Wayne Haywood . . *Corsicana, Texas*
Alexander, Samuel Walton . . *Dallas, Texas*
Alford, Raye *Waelder, Texas*
Allen, George Scott *Emory, Texas*
Allen, Joe Arthur *Frost, Texas*
Allen, Travis Jerome *Yoakum, Texas*
Allison, Harold Ramsey . . . *Houston, Texas*
Alpha, Granville *New Orleans, Louisiana*
Amerman, Jane *Houston, Texas*
Ammons, Charles Charske . . *Houston, Texas*
Anderson, Aubra *Houston, Texas*
Anderson, Gwendolyn Jessie . *Houston, Texas*
Armstrong, Brice Weeks . . . *Center, Texas*
Arnold, Pearl Eva *Houston, Texas*
Atlas, Jacob Henry *Houston, Texas*
Austin, Arthur Bradford . . . *Houston, Texas*
Austin, Claire Nell *Houston, Texas*
Badeaux, Lionel Charles, Jr. . *Houston, Texas*
Bailey, Olive May *Houston, Texas*
Baker, Nancy Ann *Houston, Texas*
Banner, Howard Malcolm . . *Fort Worth, Texas*
Barnes, Mary Elizabeth . . . *Houston, Texas*
Barreda, Estela *Laredo, Texas*

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Barton, Norwood Packard	<i>Mercedes, Texas</i>
Bateman, Courtenay Chedville	<i>Houston, Texas</i>
Battestin, Wilson Ivanhoe	<i>Texas City, Texas</i>
Bayless, Joe Harrison	<i>Cleburne, Texas</i>
Baynes, Morris Witter	<i>Houston, Texas</i>
Beck, Augustus Alexander	<i>Tipton, Oklahoma</i>
Beggs, Isaac William	<i>Winnsboro, Texas</i>
Bell, Charles Kenneth	<i>Houston, Texas</i>
Bell, David Martin	<i>Dallas, Texas</i>
Berling, Grace Selma	<i>Houston, Texas</i>
Binford, Doris Anne	<i>Houston, Texas</i>
Black, Ernest Gordon	<i>San Antonio, Texas</i>
Blair, Charles Melvin	<i>Vernon, Texas</i>
Blair, John Philip	<i>Port Arthur, Texas</i>
Blake, Tom Walter	<i>Houston, Texas</i>
Blewett, Joe Floyd	<i>Dallas, Texas</i>
Blocher, George Duvernoy	<i>Houston, Texas</i>
Boehm, Herman Amond	<i>Houston, Texas</i>
Bond, Robert Carlysle	<i>Houston, Texas</i>
Bonner, Georgiana Campbell	<i>Houston, Texas</i>
Boone, Graham Baxter	<i>Dallas, Texas</i>
Borders, Coy	<i>Carthage, Texas</i>
Boynton, Elbert Arthur	<i>Norphlet, Arkansas</i>
Bracey, Claude Odell	<i>Houston, Texas</i>
Branard, Charles Ritchie	<i>Houston, Texas</i>
Brandt, Gloria Elizabeth	<i>Houston, Texas</i>
Brannan, David Byrd, Jr. . . .	<i>Port Arthur, Texas</i>
Bright, John Harvey	<i>Houston, Texas</i>
Bringhurst, Winona Elizabeth	<i>Houston, Texas</i>
Brooks, Wilson Watts, Jr. . . .	<i>Dallas, Texas</i>
Brown, Hazel Beatrice	<i>Houston, Texas</i>

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Browne, Thomas Maxwell . . .	<i>San Antonio, Texas</i>
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Bulbrook, Anna Virginia . . .	<i>Fort Worth, Texas</i>
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Conte, Raphael	<i>Houston, Texas</i>
Cornelius, Anne	<i>Houston, Texas</i>
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Cullen, Agnes Louise	<i>Houston, Texas</i>
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Miron, Charles	<i>Houston, Texas</i>
Mitchell, Ruth Martha. . . .	<i>Houston, Texas</i>
Moebes, Albert Leo	<i>Houston, Texas</i>
Monaghan, Eula Mae	<i>Houston, Texas</i>
Monroe, Dan Barler	<i>Houston, Texas</i>
Moore, John Buchanan. . . .	<i>Galveston, Texas</i>
Moore, Mary Louise.	<i>Houston, Texas</i>
Moore, Thomas Richard	<i>Houston, Texas</i>
Morales, Manuel Claude	<i>Brownsville, Texas</i>
Moreland, Clyde B.	<i>Houston, Texas</i>
Moreland, Payson William . . .	<i>Dallas, Texas</i>
Morgan, William Oliver	<i>Denison, Texas</i>
Morrison, Bennie	<i>Houston, Texas</i>
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Navarro, Josephine Camille. . .	<i>Houston, Texas</i>
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Nelson, Dorothy Elma	<i>Houston, Texas</i>
Newton, James Wilson	<i>Houston, Texas</i>
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Nixon, Edward James	<i>Texarkana, Texas</i>
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Norvell, Harvey	<i>Beaumont, Texas</i>
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Schurman, Clarence Adolph . .	<i>Houston, Texas</i>
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Seaman, Marian Estelle . . .	<i>Houston, Texas</i>
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Walter, Katie Emma	<i>Houston, Texas</i>
Ward, Charles Lowell	<i>Houston, Texas</i>
Weidenbaum, Adolph David. .	<i>Panhandle, Texas</i>
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Willis, Marshal Edwin	<i>Houston, Texas</i>
Willson, Lucille Elizabeth . .	<i>Houston, Texas</i>
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